

PD-ABR-592

**AN INDEPENDENT EVALUATION
OF SERVICIO NACIONAL DE
ELECTRICIDAD**

COSTA RICA

**NRECA International, Ltd.
Washington, D.C.
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P R E F A C E

The International Programs Division of NRECA recognized the uniqueness of the Servicio Nacional de Electricidad (SNE) in the Central American region. With the growing interest for the private capital participation in the electric power sector in most of the region's countries, there is a new awareness of the need for a credible regulatory system to provide confidence to potential investors while safeguarding the interests of the energy-consuming public. The existence of SNE as an established and capable institution for this purpose gives Costa Rica a basis for proceeding successfully with new licensing, contracting, and investment programs for power expansion.

Working under a cooperative agreement with USAID's Regional Office for Central America and Panama (ROCAP), NRECA is assisting Costa Rica to strengthen this regulatory infrastructure in order to take full advantage of the new wave of private investment potential. The Costa Rican Government and SNE's management are in the process of re-evaluating the technical, organizational, and fiscal foundations of SNE to serve this role. Regulatory reform legislation is pending in the national legislature and should be acted upon soon. This general examination of SNE as a regulatory institution was requested by SNE and the Government in order to provide a fresh perspective on the specific directions to take in this process.

NRECA is also undertaking this assistance in the belief that Costa Rica -- and SNE -- can serve as a model for other countries that are preparing to take this same path.

NRECA hopes this report contributes constructively to the regulatory strengthening process in Costa Rica. However, the authors do not presume to supply the necessary political and administration judgement of the specific case of Costa Rica to determine whether all of their recommendations are feasible, and if feasible, in what specific format and time-frame they may be implemented. These judgements are properly left to SNE's administration and the political decision-makers of the country to determine. The recommendations contained in the report should be regarded and used, rather, as guidelines for action that could enable SNE to better fulfill its statutory mandate.

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Finally, the role of Lic Leonel Fonseca, the General Manager and Chairman of SNE must be acknowledged. He was very gracious with his time and for creating the total environment within which a constructive evaluation could be accomplished.

The team member, Shibu B Dhar, the primary author of this report, is thankful for the support he received from the NRECA staff in Washington, D C, and others who went beyond the call of duty in quickly and efficiently typing, editing, producing graphics and preparing for final printing.

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SECTION 1.0 EXECUTIVE SUMMARY

A. OVERVIEW

Background

This report provides an assessment of the effectiveness of the regulatory performance of the Servicio Nacional de Electricidad (SNE) by the National Rural Electric Cooperative Association (NRECA) International, Ltd, an internationally known utility consultant, of Washington, D C This evaluation was funded by USAID/ROCAP through their contract with NRECA. SNE was established on July 31, 1928 by Law Number 77, to regulate power utilities in Costa Rica Later, in 1941, the responsibilities of SNE were expanded by Laws Number 258 and 256, placing under its jurisdiction everything related to the utilization and regulation of water resources and electricity Today, through even more laws, SNE has extensive, but inconsistent, responsibilities in electricity, water, irrigation, transportation, environmental issues, fuels, and telecommunications The growing areas of responsibility, and lack of adequate means to raise revenues to cover the cost of its mandated services, have culminated to the point where it is unanimously agreed that SNE requires a major overhaul A major overhaul will require legislative action to completely correct the situation The audit team has, however, approached its task with the attitude that there are many things that can be accomplished within SNE, with or without legislative action, that will improve the efficiency of its operations Therefore, a dual track has been pursued by the audit team in its investigations, and will be evident in its final recommendations

This report provides evaluations and recommendations to enhance the regulatory effectiveness of SNE

Methods of Evaluation

As per the Terms of Reference provided by the NRECA to audit the Servicio Nacional de Electricidad (SNE), a team of consultants arrived in San Jose to commence work on Saturday, June 15, 1991. The team consisted of Shibu Dhar, a consultant with experience at both the California Energy Commission and Detroit Edison, Jim Morriss, General Manager of the Association of Texas Electric Cooperatives, and Robert Chronowski, the Audit Coordinator. All three have had previous experience in Costa Rica, and are familiar with the relevant organizations and regulatory issues in Costa Rica. The team conducted investigative interviews both inside and out of SNE between June 17 and July 2 to obtain the necessary data.

The list of meetings and interviews to be conducted by the audit team was coordinated with Lic. Leonel Fonseca, the General Manager and Chairman of SNE, and his senior managers. The internal meetings covered both professional and non-professional staff plus representatives of the employee union and staff association. The external meetings included representatives of all of the regulated institutions and other relevant parties such as the Minister of Energy (portfolio includes energy, mines, environment, and natural resources), the Chief of the Energy Directorate (DSE) of the Ministry, the Office of the Controller General, a Congressional representative, and representatives of the relatively newly formed Private Power Producer's Association. A debriefing session was held with Ing. Heriberto Rodriguez prior to the audit team's departure from San Jose.

The interviews were broken down into those that all three consultants would conduct together, with the rest divided up between the three to conduct individually. The team also met with the five directors of SNE so that all aspects of SNE were investigated.

Additionally, the audit team obtained a copy of a new bill that is currently in Congressional committee that proposes a major overhaul of SNE and its functions. The team also reviewed all available formal comments on the pending legislation to better understand the current thinking concerning SNE. The team was also aware of the history of failed legislative attempts to reform the SNE that date back to the 1960s.

After completion of the data gathering, and the review of the pending bill, NRECA staff analyzed and evaluated SNE's operations to develop a profile of the organization. The preliminary issues, conclusions, and recommendations were verified in the field with the management and staff of SNE. As a result of the review process, the issues and recommendations in the report are based on facts which are accurate to the best knowledge of the NRECA audit team. All findings, issues, and

recommendations presented in the report are NRECA's and should not be construed as those of SNE management or staff

Organization of the Report

The report contains six sections, following this Executive Summary, as follows

Section 2. INTRODUCTION - provides a brief description of the background of the study, scope of the report, approach and methods, and the Terms of Reference

Section 3 EVALUATION OF PRESENT ORGANIZATIONAL STRUCTURE - offers a detailed review of the present regulatory duties and functions of SNE in terms of consistency, methodological appropriateness and comprehensiveness

Section 4 PRELIMINARY RE-ORGANIZATIONAL STRUCTURE OF SNE - provides an outline of a new organizational structure to stream-line the present regulatory process, and to incorporate additional areas of responsibility and improve staff capabilities to meet the requirements of pending and present legislation to strengthen SNE's regulatory responsibilities

Section 5 TRAINING AND PROFESSIONAL DEVELOPMENT NEEDS - provides a list of basic training programs needed by SNE to upgrade its staffs' analytical and regulatory processing capabilities

Section 6: KEY ISSUES AND RECOMMENDATIONS - summarizes the audit results by identifying over 34 key issues and providing 42 recommendations for implementation to improve the regulatory effectiveness of SNE

In Annex A, Annex B, Annex C, and Annex D, the following forms and an english translation of the pending legislative bill are included Annex A - NRECA's Audit Survey Form, Annex B - A copy of the TOR, Annex C - english translation of the draft legislative bill to re-organize SNE, and Annex D - Sample Common Data Format for reporting electric utility's historical and planning data

B ISSUE SUMMARIES

Review of Regulatory Functions

The overall objective of the SNE audit included the determination of which improvements, if any, could be achieved in the technical performance and operations of SNE and, specifically, which, if any, measures should be instituted. The primary goal was to explore all economical opportunities to improve the effectiveness of its regulatory functions.

In evaluating the SNE organization, the following key questions were posed:

- a) *Is the SNE's organizational structure logical and is it conducive to meeting legislatively mandated goals? Are the missions and functions clearly defined and understood?*
- b) *Are interfaces logical and well-defined? Are there overlapping or duplicative responsibilities between departments?*
- c) *Are staff levels, both in numbers and expertise, appropriate and do they support the achievement of regulatory goals?*
- d) *What are the major operating improvements in terms of staff training and equipment? Can they be quantified?*
- e) *Are there major increases in the scope of existing functions in the proposed re-organizational legislation? Are there adequately trained professionals to implement these additional regulatory functions?*

The best interests of consumers, government, and employees of SNE will be served only if the proposed organization satisfies the above criteria. There were four major points of consensus which emerged from the NRECA's audit of SNE:

- a) *There are significant opportunities for improving regulatory functions, efficiency, productivity, and job satisfaction in the management and organization of the regulatory work at SNE,*
- b) *The present regulatory decision-making process is not proactive and transparent to the public,*

- c) *The regulatory process is not truly a planned process although its activities may occur on a cyclical basis,*
- d) *The current job designs, training, and availability of tools and equipment constrain efforts at improvement*

The SNE Employees Union and professional staff have independently prepared a report and recognized that there are significant opportunities for improving efficiency, productivity, and job satisfaction with regard to the management, operation, and organization of SNE. NRECA's audit team concurs with most of their recommendations and observations. The interest shown in the organization by its employees is exemplary.

Opportunities For Improvements

There are several approaches by which the regulatory effectiveness of SNE can be improved. These mechanisms can be placed into four classes which are believed to encompass the range of alternatives. The four classes are:

- *Direct Regulation*
- *Incentive or Market-based Approaches*
- *Informational Approaches*
- *Mixed Approaches*

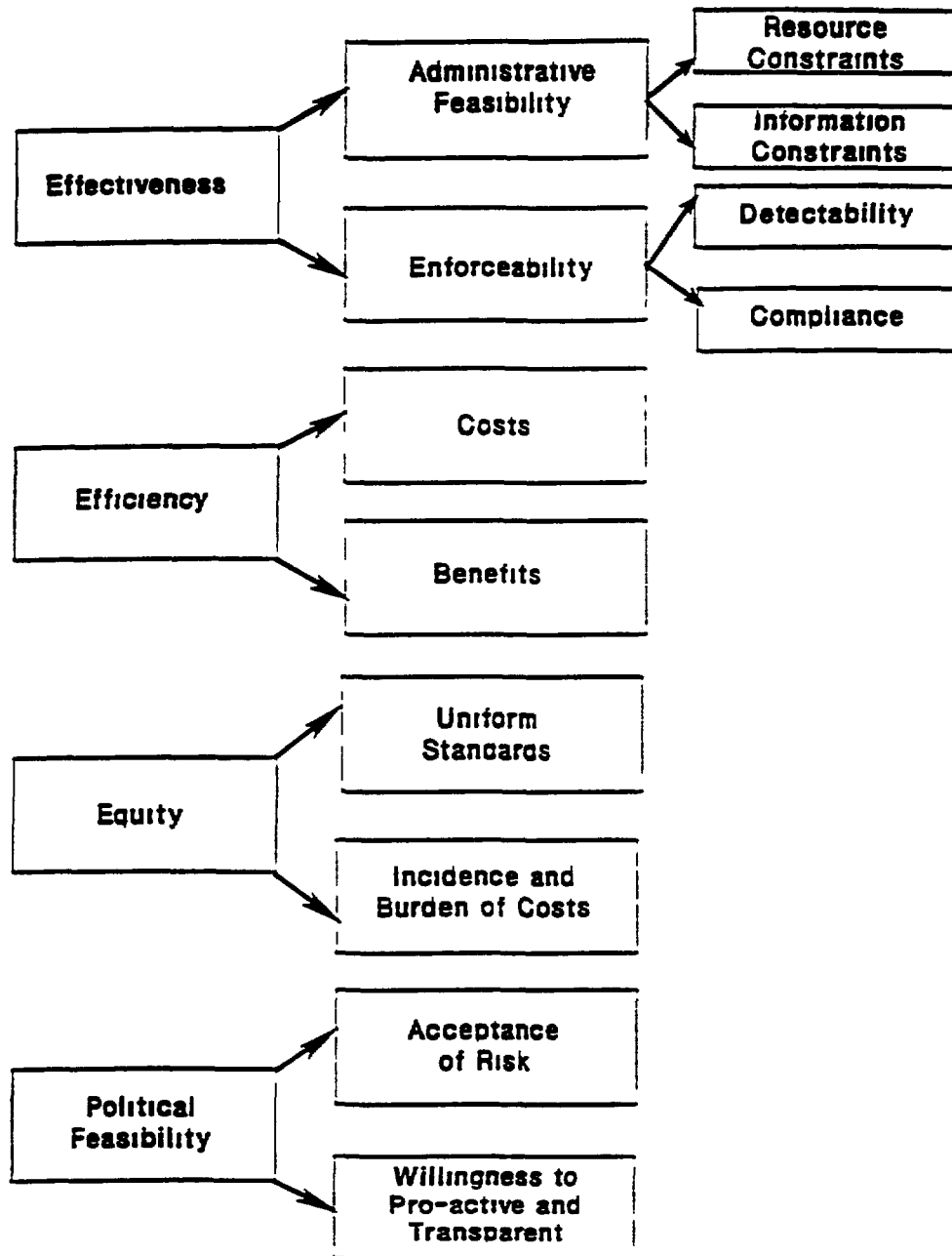
Each kind of regulatory approach has many variants. Our identification of key issues and potentials for improvement of SNE's regulatory functions are based on a combination of these approaches.

In order to re-organize SNE, it is recommended that the SNE establish a Task Force to estimate the cost impacts of all regulatory functions in terms of their effectiveness, efficiency, equity, and political feasibility. **Figure 1.1** attempts to summarize the outcome of various approaches of utility regulations which the recommended Task Force might utilize in the process of defining the functional duties of SNE.

Key Issues

The identification of key issues is based on conclusions by NRECA drawn from discussions with SNE personnel associated with regulatory

FIGURE 1.1
Various Approaches For Utility Regulations



activities, personal interviews with each supervisor/manager, studies obtained from SNE sources, discussions with all regulated entities, and an analysis of the pending legislation which describes in detail SNE's regulatory functions. Since all issues appear to have considerable value in the improvement of the operational effectiveness of SNE, the audit team suggests that the SNE and the national legislature address these issues in the SNE's re-organization. Briefly, the weaknesses of SNE can be classified in the following areas:

- *Procedural Issues*
- *Regulatory Functions and Duties*
- *Organizational Structure*
- *Data Reporting and Analytical Studies*
- *Lack of Training Program and Equipment*
- *External Relations (Public and Legislature)*
- *Budgetary Constraints*

Tables 1.1 through 1.3 summarize the team's identification and evaluation of each of the 18 issues in the areas of procedural functions, electricity regulatory functions and duties, and organizational structure of the SNE. An additional 17 issues for the various other regulatory functions and staff training needs are summarized in Table 1.4. Those issues scored "high priority" or "medium priority" constitute the largest subset of issues that the legislature must address when deciding upon the new regulatory procedures and structure of SNE. Tables 1.1 through 1.3 enumerate only two low priority issues which must eventually be addressed, but which may be postponed until a later date.

In Section 6.0, background discussions and recommendations for the resolution of individual issues by the SNE and/or legislature are included.

C STRATEGIC RECOMMENDATIONS

The principal objective of the audit was to identify opportunities to improve the efficiency and effectiveness of the regulatory services provided by the SNE. Our review resulted in 42 recommendations that would, if fully implemented, result in substantial regulatory improvements and benefit both the consumers and regulated entities. A summary of these recommendations is provided in Table 1.5.

Due to the difficulty in estimating some of the costs and benefits of the recommendations, and to avoid implying a level of precision that may not be justified for those recommendations that were susceptible to quantification, we categorized the recommendations based on an assessment of the improvements attainable in three key areas

- *Consumer Protection*
- *Decision-Making Process*
- *Improvement of Analytical Capability*

The recommendations are rated at one of three possible impact levels high, medium, or low. These ratings are estimates of the priority each recommendation should receive so that resources may be allocated more effectively. The ratings have the following definitions:

- High** - Recommendations whose implementation are a prerequisite to meaningful organizational change (for example, setting regulatory service level targets and functions), or which will provide positive public exposure for the SNE
- Medium** - Recommendations involving regulatory activities the SNE should consider after the reorganization of SNE and definition of all regulatory functions
- Low** - Recommendations involving issues with the least significant regulatory service impacts on utilities, and decisions which must eventually be made, but which can be postponed beyond the time frame of a two to three-year planning period

These classifications are provided for prioritization purposes only, and NRECA's audit team recognizes that in-depth feasibility studies may result in different classifications

D NEXT STEPS

Implementing the recommendations will require significant effort and resources to develop implementation plans, to make available finance, manage the implementation process, monitor progress, and approve final actions. The SNE should consider assigning a senior management staff or an outside consultant as facilitator to provide help in the implementation process of **high priority recommendations**. The entire

Table 1 1

Procedural Issues

| Issue Number | Issue Title | High Priority | Medium Priority | Low Priority |
|-------------------------|---|--------------------------|----------------------------|-------------------------|
| 1 | Regulatory Planning Cycle | ● | | |
| 2 | Public hearing process for regulatory issues | ● | | |
| 3 | Periodic review and critique of SNE's policies, programs, and procedures where circumstances are changing | ● | | |
| 4 | Regulatory decisions by the SNE are not binding and final | | ● | |
| 5 | Intervenor Compensation Fund | | ● | |
| 6 | Need for evaluation of demand forecasts and supply plans | ● | | |

Regulatory Functions and Duties - Electricity Regulation

Table 1.2

| Issue Number | Issue Title | High Priority | Medium Priority | Low Priority |
|--------------|--|---------------|-----------------|--------------|
| 7 | Energy Efficiency Program | | ● | |
| 8 | Siting and Licensing of Power Plants | | | ● |
| 9 | Rate Design and Financial Analysis | ● | | |
| 10 | Environmental Compliance | ● | | |
| 11 | Development of renewable energy resources and alternative energy technologies in all areas of production and consumption | | ● | |
| 12 | Energy efficiency improvement through standards and codes | | ● | |
| 13 | Private sector participation in power supply | ● | | |
| 14 | Energy shortage contingency planning | | | ● |
| 15 | Budget constraints of SNE | ● | | |

Organizational Structure

Table 1.3

| Issue Number | Issue Title | High Priority | Medium Priority | Low Priority |
|--------------|---|---------------|-----------------|--------------|
| 16 | Appointment of Board of Directors | ● | | |
| 17 | Public Advisor Office | ● | | |
| 18 | Organizational performance and staffing | ● | | |

Table 1 4
Summary of Other Issues

| Issue No. | Issue Title | High Priority | Medium Priority | Low Priority |
|--|---|----------------------|------------------------|---------------------|
| A. Estadística | | | | |
| 1 | Common data format should be used for collecting electric utilities forecasts and supply plans | | ● | |
| 2 | Need for the evaluation of historical operational and financial performance of utilities | ● | | |
| 3 | Fuel Use Database for forecasting | | ● | |
| 4 | Environmental Database for forecasting * | | ● | |
| 5 | Transportation Database for forecasting | | ● | |
| 6 | Need for the periodic publication of Performance and Status Reports on electricity, telecommunication, water resources, transportation and environmental conditions in Costa Rica | | ● | |
| B Training Programs, Tools, and Equipment | | | | |
| 7 | Lack of training and career development programs for the professional staff | ● | | |
| 8 | Lack of training programs to the non-professional staff | | ● | |
| 9 | Lack of computer hardware, software, and other tools | ● | | |

*** In accordance with Article 9 of pending legislation**

Table 1 4
Summary of Other Issues

| Issue No | Issue Title | High Priority | Medium Priority | Low Priority |
|----------|---|---------------|-----------------|--------------|
| C | External Relations | | | |
| 10 | Inadequate Public Relation Programs | | ● | |
| 11 | Inadequate Legislative Relations | ● | | |
| D | Telecommunications Department | | | |
| 12 | Issue of universal telephone service for all citizens | ● | | |
| 13 | Rate design alternatives for telephone service | ● | | |
| 14 | Retroactive rate making process | ● | | |
| 15 | Technology evaluation and quality of service | | ● | |
| 16 | Issue of Inter-exchange service | | ● | |
| 17 | Issue of Intra-exchange service | | ● | |

1-12

Table 1.5

Summary of Recommendations

| Recommendations | | Regulatory Impact | | |
|--|---|-------------------|--------|-----|
| | | High | Medium | Low |
| A. Procedural Issues | | | | |
| 1 | The SNE should identify all its cyclical regulatory functions and develop a regulatory processing plan for these functions within the context of its current regulatory duties and legislative mandates. Furthermore, for all other functions which are periodic in nature, regulatory processing time limits and service level goals should be established by the SNE. | ● | | |
| 2 | Establish a Public Advisor Office to assist people interested in participating in SNE proceedings. In addition, this office should be responsible for alerting the SNE to obstacles to public participation and proposing effective solutions. | | ● | |
| 3 | A periodic review of SNE's performance and service level goals should be established by the legislature. Once regulatory functions and service goals are set in a specific, measurable and time-phased way, ambiguities should be eliminated. | | ● | |
| 4 | The Congress should declare that all decisions which are adopted in a public hearing process by the SNE Board of Directors are binding. | ● | | |
| 5 | Establish an Intervenor Compensation Fund or free legal services for financially burdened consumers. | | | ● |
| B. Regulatory Functions and Duties Electricity Sector | | | | |
| 6 | The SNE should have the responsibility for the evaluation and adoption of official electricity forecasts and supply plans for the electric utilities. | ● | | |
| 7 | The SNE should assess new energy conservation program opportunities, develop new strategies and projects to implement conservation programs, and monitor and evaluate project results. | ● | | |

Table 1.5
Summary of Recommendations

| Recommendations | | Regulatory Impact | | |
|-----------------|--|-------------------|--------|-----|
| | | High | Medium | Low |
| 8 | The SNE should have the exclusive authority to certify all power facilities (power plants and transmission lines) in Costa Rica | ● | | |
| 9 | Provide appropriate training programs for the SNE staff in the areas of utility rate design and financial analyses | ● | | |
| 10 | Establish an Environmental and Licensing Division within SNE organizational structure | ● | | |
| 11 | Establish an Alternative Energy and Technology Development Program at SNE The goal of SNE should be to make available and promote the use of new energy systems which offer the most positive economic and environmental impacts Alternative systems utilizing wind, geothermal, fuels from biomass, and solar energy systems should be the prime areas of efforts | | ● | |
| 12 | Prepare an action plan for developing institutional capabilities for adoption and enforcement of building and appliance standard and codes, | | ● | |
| 13 | Prepare legislation and regulations related to the adoption, monitoring and enforcement of standards and codes in Costa Rica | | ● | |
| 14 | Develop staff capabilities to monitor and to evaluate the technical, economic, and financial implications of private power projects connected to the national grid and in isolated areas | ● | | |
| 15 | On a periodic basis (e g , every three years) SNE should prepare an Energy Shortage Contingency Plan and submit to the legislature a plan to deal with emergency conditions in energy supply in Costa Rica due to man-made or natural calamities | | | ● |

Table 1.5

Summary of Recommendations

| Recommendations | | Regulatory Impact | | |
|-----------------|--|-------------------|--------|-----|
| | | High | Medium | Low |
| 16 | Strengthen existing, and develop additional revenue generating regulatory functions for the SNE, plus consider a one-time structural adjustment with national funds, or funds solicited from a source such as the World Bank, to wipe out SNE's debt | ● | | |
| 17 | The Board of Directors should represent all fields relevant to regulatory entities and the public at large. Review the appointment procedures of Board of Directors and their required background qualifications | ● | | |
| C | Organizational Structure of SNE | | | |
| 18 | Create a Public Advisor Office in the organizational structure of SNE | | ● | |
| 19 | Stream-line and re organize SNE to improve its regulatory performance service | ● | | |
| 20 | Consider hiring of additional professional staff in the areas of environmental regulation and macro-economic analyses of project financing schemes | ● | | |
| D | Estadística Office | | | |
| 21 | Develop regulation for utilities to submit demand forecasts and supply plans on a biennial basis to SNE | | | ● |
| 22 | Develop common data forms for all regulated entities - electric utility, telecommunications, transportation, fuels | | | ● |
| 23 | Develop regulations for performance data submissions | ● | | |
| 24 | Develop formats for performance data in the technical and financial areas | | ● | |
| 25 | Implement a fuel use database for all sectors | | ● | |

Table 1 5

Summary of Recommendations

| Recommendations | | Regulatory Impact | | |
|-----------------|---|-------------------|--------|-----|
| | | High | Medium | Low |
| 26 | Maintain a transportation database for private automobiles, public buses, trucks, and others | | ● | |
| 27 | Develop and maintain an environmental database for all major pollutants from electric utilities and industries | | ● | |
| E | Training Programs, Tools, and Equipment Needs | | | |
| 28 | Publish biennial utility status reports on - electricity, telecommunications, transportation, environment, others | | ● | |
| 29 | Set aside funds for continuing training programs | | ● | |
| 30 | <i>Professional Staff</i> Develop training programs in the following areas (a) Seminar on regulation of public utilities (electric, gas, and telecommunications), (b) Rate design, revenue allocations to customer classes, (c) Electric utility engineering, (d) Seminar on accounting and financial management, (e) Project economic appraisal, (f) Energy planning and policy, (g) Environmental regulations and project impact analyses, (h) Private power projects evaluation, (i) Telecommunication utility regulation, (j) Utility management audits and procedures, (k) Water regulation and rate design, (l) Telephone market structure analyses, (m) Utility regulation and privatization | | ● | |

Table 1.5

Summary of Recommendations

| Recommendations | | Regulatory Impact | | |
|-----------------|---|-------------------|--------|-----|
| | | High | Medium | Low |
| 31 | Non-professional Staff Develop training programs in the following areas (a) Effective utilization of micro-computers, (b) Relational database management, (c) Successful program and project management, (d) Basic computer training for word processing, spreadsheets, and graphics, (e) Finance and accounting for non-financial staff, (f) Supervisory success skills, (g) Statistical analyses and data management | ● | | |
| 32 | Procure appropriate number of PCs and software for the professional and non-professional staff | ● | | |
| 33 | Procure appropriate audio-visual equipment for regulatory hearings and public presentations | | ● | |
| F | External Relations | | | |
| 34 | Define the SNE's public relations program - Make press releases more effective in announcing news-worthy items | ● | | |
| 35 | Develop coordinated individual efforts with other Boards of Directors in a strategic lobbying plan | ● | | |
| 36 | Develop a system for answering repetitive regulatory questions from legislators and the public | ● | | |

Table 1.5

Summary of Recommendations

| Recommendations | | Regulatory Impact | | |
|-----------------|--|-------------------|--------|-----|
| | | High | Medium | Low |
| G. | Telecommunications | | | |
| 37 | The SNE should be directed to perform an annual survey of telephone service. If the percentage of residential service falls significantly, the SNE should report this to the Congress with specific recommendations to arrest the decline and increase the affordability of telephone service in Costa Rica. | ● | | |
| 38 | Evaluate rate design alternatives taking into consideration the monitoring technology and socio economic issues of different consumer classes. | ● | | |
| 39 | Implement "Reasonableness of Operation" proceeding. | ● | | |
| 40 | The SNE should review and publish biennially, a Customer Quality of Service and Technology Status Report for the telecommunication utilities. | | ● | |
| 41 | The SNE should investigate the present condition of the monopoly of inter-exchange service in Costa Rica by the ICE to determine whether inter-exchange service should be a natural monopoly under the current or foreseeable technology. | ● | | |
| 42 | The SNE should investigate customers' costs/benefits of competition in intra-exchange service. | ● | | |

implementation process will be contingent upon addressing the high-impact recommendations first since, in general, meaningful action plans for **medium - and - low** impact recommendations will be contingent upon the results of action taken on the high impact items

The management of SNE must be aware of the need for action to take advantage of the opportunities identified. The direction and the extent of action must be determined based on the regulatory functional needs of SNE. The Chairman must determine who will be involved in the reorganization and implementation process, who will approve action plans, and the time period for the execution of the recommendations. Some recommendations require legislative-level involvement and are concerned with jurisdictions, priorities, and regulatory service level of the SNE. Other recommendations involve, to a great extent, execution by the SNE Chairman once the overall regulatory service level priority is established. Implementation plans for both kinds of recommendations should result in determining cost impact, and these costs subsequently will be balanced against new sources of revenues and fiscal constraints. The decision to go ahead with a particular recommendation will depend on anticipating the benefit, regulatory functional priority, and the cost of implementation.

SECTION 2.0 INTRODUCTION

2.1 BACKGROUND

A regulatory effectiveness study of the Servicio Nacional De Electricidad (SNE) was requested of USAID/ROCAP by the Executive Director and Chairman of SNE and subsequently authorized by the Board of Directors of SNE. They engaged NRECA International Ltd to perform the audit study.

SNE is a Costa Rican governmental regulatory agency which consists of five members of a Board of Directors, who are directly appointed by the President of the country. One of the five members is appointed by the President to serve as the Chief Executive Director and Chairman of the SNE. Within the organization are three principal departments as originally established by Laws 258 and 276 of 1941 and 1942 respectively: 1) the Technical Department, 2) the Water Department, and 3) the Economic and Financial Studies Department. Additionally, there are other units such as (a) administrative, (b) statistics, (c) computers, (d) internal audit, and (e) legal services, etc which report directly to the Chief Executive Director.

SNE's chief objective is to serve the consumers' interest by seeking to improve the quality and effectiveness of public utility regulation in Costa Rica for electricity, telephone, water, transportation, building electrical wiring inspection, meter testing, fuel procurement (primarily petroleum products), sewer service, and other related public utility services. It also serves as a consumers' one-stop ombudsman organization, as well as a means to represent the current legislative mandate.

By law, the SNE head office is located in San Jose, Costa Rica. The 200 plus person staff is composed of managerial employees, professional employees, and support staff. Figure 2.1 illustrates the present organizational structure of SNE. The legislative mandates require SNE to regulate all utility services in Costa Rica, such items including, but not limited to: a) tariff approval of electricity, tele-

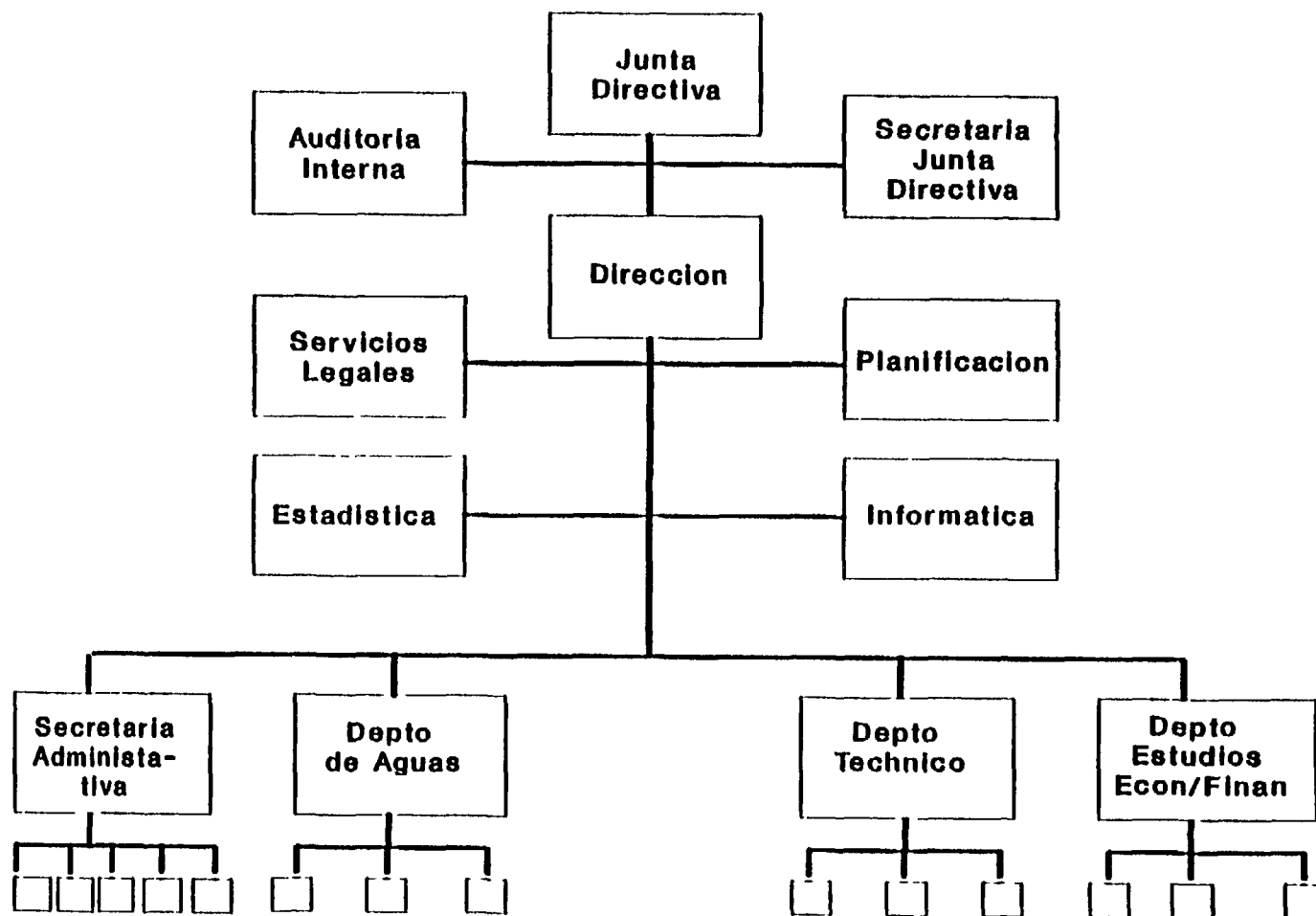


FIGURE 2 1
Present Organizational Structure of SNE

From Organization Chart Provided By SNE
 Dated January 1991

phone, water, transportation, b) approval of fuel procurement prices, c) water allocation policies for irrigation, municipal use, and hydro-electricity generation, d) approval of private power projects, e) power projects financial impact evaluation, and f) implementation of standards and codes for safety and energy efficiency

Over 32 man-days were devoted by the NRECA auditors in Costa Rica to this study, with over 30 survey forms and over 50 interviews were conducted from June 18 to July 2, 1991. This report evaluates the effectiveness of the SNE staff and makes recommendations for a modified organizational structure, staff training, tools and equipment needs for improved performance

2.1.1 The History of Regulation of Public Services in Costa Rica

(Much of the historical information in this background section was gleaned from the book 100 Anos 1884-1984 Un Siglo de Actividad Electrica en Costa Rica by Joaquin Alberto Fernandez Robles, published in 1985)

The first central station electric service in the United States was installed in New York City in 1882. In that same year, The Electric Company of Costa Rica was chartered as a private corporation. In 1884, public street lighting was inaugurated in San Jose, the capital city.

The abundance of hydro resources in Costa Rica attracted the early development of electricity by foreign interests with Costa Rican investors. The rapid evolution of electric generation and distribution facilities by these controlling foreign interests led to a concern for the effect on national development by external monopolies.

In July, 1928, the President of Costa Rica signed Law No. 77, the first article of which established that "the electric power that can be obtained from the waters in the public domain in the territory of the Republic or from any other source of energy is the domain of the State."

That law also established the Servicio Nacional de Electricidad as an "Institution of the State that will be administered by individuals and under the immediate supervision of the Executive Power. The Board of Directors of this Institution is formed by seven members and three alternates named by the Executive Power and will have as its

responsibility the direction, management and organization of all works necessary to establish electric services in the country which, actually (now) or in the future can be derived from electric power, and will be charged with the commercial exploitation of same. The members (of the Board of Directors) will perform their commitments with absolute independence of the Executive Power and will be solely responsible for the administration of the institution and it will weigh over them whatever legal responsibility that can be attributed to them. They will be unremovable unless some legal responsibility is exercised against them." It is also indicated that "the Executive Power will have no intervention in the administration and that the Home Secretary (Ministro de Hacienda) will limit oversight to the general progress of the business."

The 1928 law further asserts in its 17 articles that "the State will exploit, through the Servicio Nacional de Electricidad which for this objective is created, all electrical powers greater than 500 horsepower and will provide electrical services to the public. The concessions and the right of benefitting from electrical powers less than 500 horsepower only can be granted by the Servicio Nacional de Electricidad for limited time and having the right to supervise the utilization of such waters. The concession must express the duration, price and quantity of electrical power and will terminate, among other things, if tariffs higher than those established are charged without the authorization of the Service.

"With regard to the rights (previously) acquired by companies or individuals for the provision of electrical power to the public, they cannot be extended (renewed) and the established municipal electric plants or those pending will retain their character as such."

Among other provisions of Law No. 77 of 1928 were these:

- The Servicio Nacional de Electricidad was empowered to "for its original cost or its actual cost of reproduction, acquire one or several of the existing electrical plants in the country of 3,000 horsepower or more whenever their owners desire to sell them.
- The Servicio was authorized to "contract, as soon as possible, the complete construction and installation of an electrical plant of no less than 10,000 horsepower to supply power to the people of the Central Mesa and to establish plants in different locations in the Republic in accordance with the needs of the people, if they are commercial (feasible)."

- The law declared a public utility "for the purposes of expropriation, all necessary works to establish electrical plants and the transmission and distribution of electrical power "
- Apparently, other social goals were associated with the establishment of public service regulation Article 12 of the law indicated that " once the margins for one year reach a sum equal to the margin of the liquor monopoly, the government will cease to be the manufacturer and vendor of these with fiscal goals, reserving that monopoly only to manufacture and supply alcohol for industrial and medicinal uses "

Following the passage of the original 1928 law, several additional laws were adopted to deal with specific problems that arose with the implementation of public service regulation

Much of the residential electric service was not metered due to the modest consumption In 1934, the Servicio Nacional de Electricidad approved, upon application of a municipal system, a flat monthly charge for the connection of a radio receiver The testing of meters was added to SNE's duties in 1938

The owners of electric companies mounted strong opposition to the government's move to nationalize the industry At the request of the Costa Rican president, President Franklin Roosevelt sent a technical expert from the Tennessee Valley Authority to help with the mediation of problems As a result, the government of Costa Rica negotiated a contract with representatives of the electric companies which unified all of them into one company

Nationalization per se had not taken place because the government had not been able to finance the purchase of companies as their concessions expired In 1938, a short three-article law was passed that implored the President of Costa Rica to "proceed to expropriate" certain electric companies and authorized him to arrange financing for the purchase with the to-be-acquired property as collateral together with the credit of the State The administration of the acquired companies was proposed to be according to "the dispositions of Law No 77 of July 31, 1928 " The reference was to the law that created SNE The intent of the law was never fully implemented

In 1941, the structure was put in place in the form of a complicated contract for SNE to acquire the Compania Nacional de Fuerza y Luz (National Power and Light Company), the one-entity result of combining all previous private power companies The complete acquisition never took place as provided for in the contract

Fernandez summarizes the situation to date in his book (p 249) with this paragraph

"The creation of this company (CNFL) was the legal consolidation of a situation of fact existent since 1927. But notwithstanding the pressure of the public and the government no enthusiasm existed on the part of the owners of the company to invest in new works of significant importance. This, obviously, caused electric service to worsen and at the same time affected the economic development of the country in a grave manner."

Then, in 1949, a government company was formed -- the Instituto Costarricense de Electricidad (ICE) -- in contradiction to the stated intent of Law No. 77 and other laws that SNE be the national power agency. ICE grew rapidly and whetted the national appetite for complete nationalization of the electric industry. In 1968, after several years of negotiation beginning in 1962, ICE consummated the purchase of a part of the private power company, although it remained a blend of public/private ownership. Included in the deal was the fledgling telephone system owned by the company. In 1970, a contract was signed between ICE and NCFL which defined a "policy of coordination" for the two companies under which they would collaborate in setting goals, using resources, exchanging information and establishing a uniformity in their two systems.

Again, a paragraph from Fernandez (p 260) summarizes the consumation of 50 years of utility development:

"In summary we can affirm that the previous negotiation was concluded in terms more favorable than anticipated in the 'Electric Contract' and in a form highly convenient for the country, and within our traditional democracy and respect for laws and private property."

"In this form, the Instituto Costarricense de Electricidad is now a shareholder in the most important distribution company, and additionally in the Compania Radiografica Costarricense S.A. (since 1964) which provides international telecommunications services, and in three large rural electric cooperatives, thus achieving an adequate decentralization of its activities, better efficiency, and a convenient participation in private initiative."

Among several advantages listed by Fernandez of the ICE/NCFL alliance, one related to regulation of rates stands out. "A better control was achieved over the rate structure and the rates of the largest distribution company in the country, with more than 100,000

customers, which provides its services in the area, economically and socially, most important of same (the country) "

This development is noteworthy in that it permanently thwarted the original 1928 statutory role of SNE as the national power agency (reaffirmed in 1941) and set in place a continuing institutional conflict between the large and powerful state-owned power company and the regulatory agency of the state. The friction created by these circumstances still plays a significant role in the current problematic

While the details of the evolution of regulation are interesting, recounting them further does not fall within the scope of this report. It is appropriate, however, to take note of the beginning of regulation in Costa Rica because SNE still is the only functioning utility regulatory authority in Central or South America. Then, too, it is important to recognize that the audit conducted by this team was of an agency with a lot of history and a great deal of evolved responsibility over its 63 years of existence.

2.1.2 The Present Regulatory Situation

The law under which SNE currently operates is Law No. 258 of August 28, 1941. The focus of SNE's definition as an agency still was on electricity, as the name implies. The name remained the same (National Service of Electricity) as that established in 1928, but the mission changed, so a parenthetical explanation has been added. It is most visible on the agency's vehicles -- (Regulatory Organism) -- which denotes what they really do in contrast to what the name implies. The proposed legislation to transform the agency, now before the Congress, uses the name "Regulatory Authority of Public Services."

A paragraph from an internal SNE document describes the effect of Law No. 258-41 thusly:

"It is the actual constituting law of the Servicio Nacional de Electricidad which canceled all the laws indicated in section I of this report (laws from 1928 to 1941) and transformed the legal nature of SNE, which ceased to be the state institution responsible for the exploitation and commercialization of electric energy in the country, along with the fiscalization and regulation, to be converted into an eminently regulatory institution."

It does not seem useful to repeat here in detail the scope of SNE's regulatory responsibility. Suffice it to say that the agency has very

comprehensive authority to regulate the electric, telephone and water/sewer utilities (including state-owned, municipally-owned, cooperatively-owned and privately-owned entities) with regard to rates, quality of service, areas of service responsibility, and the inspection/approval of electrical wiring in all construction as well as the testing of electric meters. It also has jurisdiction over national water resources, irrigation, the wholesale rates and contracts of the state-owned refinery, the licensing and retail prices of privately-owned gasoline service stations, the passenger rates of railroads and airlines, appeals only of rates for passenger buses set by another government agency, and all customer complaints related to all of the foregoing.

The aforementioned internal SNE document entitled "Anexo #6, Servicio Nacional de Electricidad, Marco Legal" documents in detail the broad scope of the agency's statutory mandate and includes some observations by the report's author concerning the viability of certain responsibilities.

A project of law (proposed legislation) has been introduced by the president of the Congress. It is now assigned to a committee, but has not yet been heard. The assistant to the bill's sponsor speculated that it could be out of committee in three to four months (i.e., October, 1991) and to the Congress for floor debate. His overall estimate for passage is 12 to 18 months. (The Congress meets continually.) The original draft of the legislation was written by Leonel Fonseca, General Manager of SNE.

Some changes to the proposed legislation have been suggested in a formal document prepared by the Association of Employees of SNE and delivered directly to the sponsor of the bill. These changes do not substantively affect the scope of the legislation, although they contain important provisions.

The proposed legislation does not alter substantially the scope of the regulatory function now centralized in the one agency.

2.1.3 General Observations

The problematic of SNE -- an historic "super agency" with a tremendous scope of oversight responsibility for the nation's developmental infrastructure and with totally inadequate resources to accomplish its statutory mandate -- has been studied from within and without. The NRECA audit team's terms of reference focused on the confirmation of the actual situation to be compared with that which

has been reported by SNE authorities as substantiation for specific aid requests

It is the consensus of the audit team members that the situation is indeed as it has been reported and that the incumbent management of SNE has realistically assessed the agency's internal weaknesses, its basic inadequacy in trained personnel and essential equipment, its need for legislative reform and the necessity for much stronger governmental support if it is to fulfill to any meaningful degree its statutory mandate

In very broad, general terms, the audit team observes the following

1 SNE's history and underlying basic concept constitute in the Costa Rican context a very useful, constructive foundation on which to build a functional regulatory process Its singularity among Central and South American countries makes possible the development of a model regulatory body which could guide the formation of similar entities in other countries as have been strongly recommended by the World Bank The development of such a model agency in Costa Rica could contribute materially to the societal and economic goals and necessities of that country and others of similar circumstance

2 The organizational responsibilities of SNE (or its eventual successor agency) should be structured on macro rather than micro principles An example is the fact that SNE is expected to perform inspections, ostensibly in the entire country, of residential and commercial electrical wiring installations, to test and calibrate all electric meters for the entire country and approve all telephone installations One analysis states that 27.5 percent of the 1990 SNE budget derived from these activities Such relatively minor functions, although important, are not appropriate for a regulatory body with responsibility for all electrical energy, telecommunications and water resources (The proposed legislation appropriately eliminates these tasks) Without the practical possibility that such wiring inspections, etc., could be a municipal responsibility, they could better be accomplished by the utilities themselves under guidelines established by SNE and with regulatory oversight to see that the function is properly implemented

3 The quality of the regulatory function will depend on the quality of the agency's personnel Since there is a statutory prohibition against hiring people from the regulated companies (which is not likely to happen anyway with SNE's non-competitive salaries), the only alternative is to train those who are there and who have a basic

orientation to regulation. A systematic and on-going training program should be set up to prepare present and future staff to regulate.

4. An essential component of regulation is autonomy and independence from the political process. While the philosophy of regulation is always subject to the political orientation of the regulators (and, through them, those who appoint them), the caution is to insulate regulatory decisions from the political influence of the regulated community to the greatest extent possible. While the present law provides for such autonomy, almost everyone confirms that it is not so in practice. The proposed reform legislation seems clear on the subject, however, the regulated companies say it will never be so in actuality.

5. A critical void in the present and proposed regulatory scheme is the "bright light" of public decision. Since the judicial system in Costa Rica is Spanish in origin, the written supplication is the primary evidentiary vehicle, that is, oral arguments are not a standard procedure. In the absence of a statutory system of administrative law procedures to provide for a formal evidentiary hearings process, serious consideration should be given to requiring at least an initial public hearing for the presentation of a major rate case by a regulated entity. There is the basis for such a hearing in the proposed legislation in that public meetings are required to receive comments from organized community groups and interested parties. The provision for these meetings could be expanded to require the presence of an informed representative of the company requesting the rate increase to respond to questions of the regulators as well as the affected parties.

Under the present procedure, rate applications are filed and information submitted to support the request. The application is reviewed by SNE staff and a recommendation prepared for the SNE Board of Directors who grants, rejects or modifies it. When the Board has made its final decision, it is submitted to the Executive Power (the president's office) for concurrence. Only then is notice of the rate increase published. All discussions and decisions are behind closed doors. There is no provision in the process for any input, questions or observations by affected parties, least of all the public.

(It is worth noting that the concept of more public decision was very well received by the Minister of Natural Resources, Energy and Mining (MIRENEM) and by the assistant to the President of the Congress. SNE management also thought the idea had merit. All saw it as a possible way to mitigate the intimidation of the regulatory process by the large regulated companies.)

2.2 Scope of Report

The purpose of the audit was to assess the organizational structure of SNE staff and the effectiveness of regulatory services provided by the staff with present tools (computer software, hardware, etc) equipment and professional training The audit work plan detailed efforts across almost all areas of the organization and focused on the following offices and functional capacities

TECHNICAL DEPARTMENT

Tariff Unit

- Water
- Electricity and Telecommunication
- Fuels
- Special Studies

Electrical Control

- Energy Supply
 - *Meter Testing Laboratory*
 - *Customer Service (Dispute)*
 - *Measurement*
- Standards
- Building Wiring Service
 - *Inspection*
 - *Review of Electrical Wiring Plan*

Telephone Control

- Central Telephone
- Network Link
- Customer Service (Dispute)

ECONOMIC AND FINANCIAL STUDIES DEPARTMENT

Evaluation of Companies

External Control

STATISTICS DEPARTMENT

The scope of technical auditor study included the evaluation of above departments organizational set-up, operational practices, staffing level, professional training needs, and available tools and equipment to perform the required legislative mandates and regulatory duties. Additionally, the auditors conducted interviews with ICE's planning, tariff, fuel purchasing, and new project development departments, CNFL, Minister of Energy and Mining, RECOPE, Rural Electric Cooperative, Municipal Electric Company, ACOPE, President of the Congress, Office of the Controller, Municipal Water Supply - ESPH, irrigation water supply - SENARA, Ministry of Economic, Industry and Commerce - MIEC, and private industry CONDUCEN

2.3 Approach and Methods

To obtain a variety of perspectives on SNE staffs' organizational structure, professional service levels, strategic issues, and opportunities for improvement, NRECA auditors interviewed all senior level managers and used survey forms to gather information from all departments' and units' professional and support staff. In Annex A, a copy of the survey form is included. Also, NRECA auditors interviewed two external members of the Board of Directors before preparing the detailed audit work plan.

Preliminary hypotheses were formed about the desired regulatory responsibilities, present staff's professional background, training level, qualifications, allocated budget in various areas, availability of computer software, models, and hardware, and the efficiency and effectiveness of the SNE staff. This preliminary evaluation provided a structural framework for the rest of the audit. Following this orientation phase, field work commenced immediately using the following three basic criteria to evaluate the regulatory effectiveness of SNE. These are

Consistency of Structure

Does the present organizational structure and regulatory process match the legislative objectives of SNE?

Methodological

Appropriateness : *Is the present regulatory process a product of analytical methods appropriate for the circumstances Costa Rican utilities (electric, telephone, fuel supply, water supply, etc) confront ?*

Comprehensiveness : *Does the present regulatory process evaluate all critical factors that affect successful expansion and operation of utilities?*

2.4 Terms of Reference

The specific Statement of Work for the technical audit is to a) review SNE's regulatory responsibilities in all technical areas (electric utilities, telecommunication, safety, fuels, tariff setting, and transportation, water, irrigation, and sewerage), b) review SNE's technical capabilities in order to identify SNE's present effectiveness for an independent evaluation of electric utilities investment needs in the following areas

- *demand forecasting,*
- *resource need justification,*
- *fuel procurement arrangements,*
- *environmental risk assessment,*
- *revenue requiremnt studies,*
- *projets economic and financial implications,*
- *regulatory proceedings and decision making process,*
- *staff training programs,*
- *available tools and equipment, and*
- *effectiveness of present organizational structure*

The complete TOR for all functional areas of this audit is included in Annex B

2.5 Organization of The Report

The report contains six major sections

SECTION 1.0 EXECUTIVE SUMMARY summarizes the findings made by the audit team and lists all recommendations resulting from the audit

SECTION 2.0 INTRODUCTION contains the objectives, scope, TOR, approach and methodology of this audit

SECTION 3.0: EVALUATION OF PRESENT ORGANIZATIONAL STRUCTURE briefly describes the institutional responsibilities of SNE and its present inadequacies

SECTION 4.0 PRELIMINARY REORGANIZATIONAL STRUCTURE OF SNE provides an outline of a new organizational structure to stream-line the present regulatory process, and to incorporate additional functional areas of responsibility and staff capabilities to meet the requirements of pending legislation to strengthen SNE's regulatory responsibilities

SECTION 5.0 TRAINING AND PROFESSIONAL DEVELOPMENT NEEDS provides a list of basic training programs for SNE to upgrade its staff analytical and regulatory processing capabilities

SECTION 6.0 KEY ISSUES AND RECOMMENDATIONS summarizes the audit results by applying the issue classification scheme and discusses several recommendations, 41 in all, for implementation to improve the present organizational structure and regulatory effectiveness of SNE

SECTION 3.0 EVALUATION OF THE PRESENT ORGANIZATIONAL STRUCTURE

3.1 BACKGROUND

The primary objective of utility regulation is to provide customers with adequate service at a reasonable price. In Costa Rica, the need to give special treatment to utilities was recognized with the establishment of the SNE on July 31, 1928, by Law Number 77. In order to substitute orderly development for the confusion and uneconomical duplication of facilities resulting from several companies competing for business in the same area, SNE was formed to regulate utilities. Later, in 1941, the responsibilities of SNE were expanded by Law Number 258, dated August 18, 1941, putting under its responsibility everything related to the utilization and regulation of hydraulic power and electricity. In 1942, another law was passed for water utilization in which it was reiterated that it would be the responsibility of SNE to control the utilization and regulation of water resources in the public domain.

Since the passage of these three pieces of regulatory legislation, there have been no fundamental changes in the objectives, functions, and basic institutional responsibilities of SNE. However, in recent years several legislative initiatives have tried to assign new responsibilities to SNE in response to various social changes (e.g. legislation for private power generation, and privatization initiatives). The need for change is by no means over and it is difficult to predict with precision how far, or even in which direction, they will evolve in Costa Rica over the next decade. Within the SNE, the audit team has observed an office organization and method of work which has tended to evolve in an undercapitalized institution. The result is widespread inefficiency in office operations caused by the lack of sufficient tools and not by a lack of employee interest, widely varying practices from unit to unit, and a strong sense of sub-optimal performance affecting staff at all levels. While there are several examples of excellence and devoted staff, there are more examples of frustration, fragmented jobs, duplication of efforts, flawed teamwork, and unclear expectations for both daily work, and career development.

In recent years, several legislatures have recognized SNE's institutional and budgetary constraints governing the procedure for addressing, analyzing and resolving the issues affecting public utility services in Costa Rica. At present, draft legislation for the transformation of SNE into an effective regulatory organization is pending in the Congress of Costa Rica. A copy of this draft legislation is included in **Annex C**. However, the bureaucratic constraints of the legislative process in Costa Rica may not allow this legislation to be adopted in the near future. Additional time may also be required to modify this draft legislation to accommodate several other regulatory issues which are not adequately addressed or incorporated in this legislation. The draft legislation is, however, clearly a step in the right direction.

3.2 SCOPE OF EVALUATION

The overall objectives of SNE's audit included the determination of what improvements, if any, could be achieved in the technical performance and operations of SNE and, specifically, which, if any, measures could be instituted. The primary goal was to explore all economical opportunities to improve the effectiveness of its regulatory functions.

In addition, per the request of the SNE, the following specific objectives were to be addressed:

- Evaluate all major functions and determine how efficiently SNE resources are being used. If adequate and effective policies and procedures are not in place, what improvements can be instituted by the SNE.
- Evaluate the effectiveness of the organizational structure of SNE to optimally allocate staff time and capital resources,
- Identify areas in which present management and operational practices can be strengthened, and make recommendations for specific practical actions that will achieve these benefits,
- Identify and assess major external factors which may be contributing to present or potential operational problems, and recommend improvements which the SNE can make in carrying out its responsibilities and responding to these factors, and

- Provide a vehicle for improving the SNE's credibility and strengthening its relationships with regulated entities and the general public

Throughout the course of the evaluation in San Jose, Costa Rica, NRECA consultants interviewed senior management personnel in each functional area, reviewed documentation regarding policies and procedures, and visited all regulated institutions. After completion of the data gathering, NRECA staff analyzed and evaluated SNE's operations and developed the following organizational profile of the institution

3.3 SNE's REGULATORY RESPONSIBILITIES

The major duty of the SNE is to regulate all utilities and to secure adequate public service at rates which are just and reasonable both to customers and the financial viability of the regulated entities. SNE operates under Costa Rican government administrative procedures enacted by the legislature. At present, SNE regulates electricity, telecommunications, water and sewerage, the transportation industry, and petroleum fuels. It also approves building wiring and provides inspection services. It also sets standards for safety and quality. SNE also has a financial audit staff. These auditors perform audits on a regular basis, [e.g. annually,] and usually perform a special audit at the time that a utility files a rate case.

The major regulatory functions of SNE are summarized below

Control Of Competition . The Franchise And Barriers To Entry

By far one of the most awesome regulatory functions of SNE is its ability to grant franchises and thus control entry into the areas of electricity generation, water use rights, and other public services. Via control of entry, it can also control competition.

In return for an exclusive franchise, the regulated entity must agree to the following precepts:

- The utility is obligated to serve every customer requesting service,
 - Services must be priced at just and reasonable (fair and equitable) rates set by the regulatory commission,
 - The profit of the utility is strictly regulated by the commission,
 - Undue or unjust discrimination by the utility between similar customers is not allowed,
 - Service must be rendered forever unless the regulatory commission grants an authority to abandon the service, and
 - The utility must maintain adequate quality and reliability of service
-

Control Of Revenue Requirements

The control of profit is based on the SNE's right to control the total revenue requirements, [not income], and rate of return of a utility. Utilities are generally allowed to earn a fair rate of return equal to that of other businesses encountering the same level of risk.

Pricing, Rates, and Tariffs

For all utility services, SNE controls the amount of allowable revenue requirements by rate class. This is performed by use of fully allocated cost of service studies for electric, telephone and petroleum fuel production services. Projected (future) test years are used to establish overall revenue requirements.

Revenue requirements are determined based upon historical test periods, future test periods, some combination of the two, or historical periods plus known and measurable changes, typically reaching forward six to twelve months.

With regard to determination of revenue requirements by class, the auditors are not aware of any application of marginal cost- based

methods by the SNE staff. All revenue requirements by rate class are always based upon some method of fully allocated costs

Finance Of Regulated Entities

At present, SNE controls, to a greater or lesser degree, the financing requirements of all regulated entities. This pertains, for the most part, to long-term financing since SNE has virtually no control over short-term financing of regulated utilities. However, the utility must generally justify in the rate application the reason they need the new financing (e.g. to pay for a major plant expansion)

Building Wiring Service And Construction

All new buildings (commercial, industrial and residential) have to have regulatory approval and inspection of electrical wiring designs and the actual installation of electrical service line. Such close scrutiny can be viewed as counter-productive, a waste of the regulatory commission's time, and generally an intrusion by the SNE on the technical capabilities of the ICE or local authorities. On the other hand, before a public utility begins construction, or makes significant additions to its transmission or distribution lines, or power plant, it is not required to apply for and obtain a Certificate of Public Convenience and Necessity (CPCN). Therefore, the SNE has no role in ensuring that plant facilities and transportation services that the public needs are undertaken. The standard for CPCN is not specifically defined by any statute of SNE.

Safety And Standards

All regulated entities must abide by certain safety codes and standards. Public safety is a significant concern, --- electrical service drops, and meters can short-out and cause fires. SNE provides standards and specification for all types of buildings wiring by the size, type, and quality of conductor for specific applications.

All utilities' overall tariffs includes not only the rates (price structure) that can be charged, but also the rules and regulations for the quality of service. Within these rules and regulations, approved and adopted by the SNE, specific instructions are provided regarding the quality of electrical service that should be supplied by the utilities. However, in most cases, SNE does not have staff capability for monitoring and enforcing the quality of service for electricity use. Additionally, present legislation does not require SNE to provide any safety guidelines or regulatory approval for major construction of generating stations, transmission lines, fire safety, hazardous substances, or environmental emissions.

Customer Disputes

All regulated entities (or utilities) are required by law to provide reasonable and adequate service at rates authorized by the SNE. When such service is not provided, or there is a dispute over charges for the service, a complaint may be filed by an individual to SNE.

Both in electrical and telephone regulatory units, procedures for filing complaints against utilities under SNE jurisdiction are first, for the customer to try to resolve the matter with the utility, second, to bring the matter to the SNE staff for an informal resolution, and third, if the first two fail, to file a formal complaint before the SNE. However, the auditors have noticed that most of the work load in the Electrical Dispute Units is from the ICE/CNFL and related to the theft or diversion of service. Most of the telephone billing complaints are due to the recording of a higher than average number of monthly impulses.

Meter Testing

Electric watt hour meters are typically designed so that current passing through the meter interacts with a magnetic field to produce a torque that drives the rotor. The revolution of the rotor drives a series of gears causing the hands of the meter dials to advance. Most of the meters imported to Costa Rica are manufactured by General Electric and Sangamo. The precision with which a utility can test and calibrate meters fundamentally depends on how directly it links its testing operations to the transfer standards or reference standard. At present, all meters are tested based on the NBS standards of the USA.

The SNE has the ultimate authority to specify the testing procedures. It has a staff of 5 persons, 2 staff members are on permanent assignment as observers at ICE's meter testing laboratory, and 3 of the staff members are assigned to SNE's testing facility. Additionally, staff also perform occasional field tests of meters, but due to the limitation of the testing equipment and transportation vehicles, the effectiveness of this activity is very poor.

There are many visible problems within this unit. For example, most of the staff in this section are self-trained and there are no formal training programs, adequate measuring instruments, or transportation vehicles for on-site tests or visits.

Statistics And Special Studies

The SNE maintains various statistical data and develops market studies to deal with future demand and shortages of public services (i.e., electrical energy, water supply, telephone services, etc.). Usually statistical data are collected from the utilities in hard copy and re-entered into the computer for future market studies. There is no formal data reporting procedure whereby utility personnel can report data periodically based on a common data format and definitions.

At present, most utilities submit their historical operational data before the submission of rate increase requests. To eliminate the present confusion and questions about operational data submitted by the utilities, SNE should develop a common data format and data filing procedure and provide a detailed instructional text to assist in defining which data elements are required and the method to be used in their submission.

Auditors have briefly reviewed some of the market studies performed by the Statistics Department. Three market study examples are summarized below.

a) Study of National Telephones Market

Synopsis:

The estimation of users is of highest importance because it affects the calculation of principal sources of income (revenue) For this reason, the Office of Statistics takes great care with those estimates The projections are used with the plan for expansion given by ICE

Projections of revenue are subject to the following assumptions

- the consumption of service, residential and commercial, presents a seasonal behavior,
- the rate of growth of users is in accord with the available history, with the expansion of exchanges and with available capacity,
- the average collections from pay phones show a seasonal behavior,
- the sale of new telephone service is not reduced by raising the cost of installation and credit deposit because the demand is not elastic, and
- pay phones have been modified to accept coins of 5, 10, 20 Colones,

| | | | | |
|---------|-------------|------|------------|------|
| Users • | Residential | 77 % | Commercial | 23 % |
| Revenue | Residential | 48 % | Commercial | 52 % |

1987 - 1990 - Average residential use was flat, while commercial use decreased in 1987 and was flat in the 1988-1990 period

* * * * *

Conclusions

- Statistics show that a rate increase does not reduce use, but tends to regulate use and maintain its stability,
- an increase of 20 % in price generates an increase of 16 % in average revenue per customer,

- per SNE estimates, new rates yield total revenue is 25 % less than ICE projections,
- the largest increase requested is for private lines (492%), but as proposed by ICE, it is impossible to apply due to lack of detail relocation of each direct line (zonal tariff),
- SNE proposes simpler method to estimate direct line revenue that does not use distance (location),
- 49 % of new revenue would come from monthly direct line charges,
- Per SNE figures, revenue from public and semi-public phones are under estimated for 1990 - 1994 period by 4 to 8 percent due to the method and history used,
- revenue from new installation is below ICE estimates by 47 % while revenue from deposits is under estimated by 19 percent
- a concern is the relative importance being assumed by a new service which is not regulated nor approved by SNE - special public phones in booths

Recommendations.

- as in previous years, it is suggested that ICE include in the application the last approved expansion plan for each of the 23 exchanges,
 - it is recommended that ICE present an outline or a detail of vertical services ICE should indicate in which source of revenue it is recorded and what is its relativity in that source,
 - ICE should provide detail number of direct lines and the revenue per type of rate class (1 e , local, t2, t3, and t4, etc),
 - detail what concepts included by "cargos nomina y otros cargos "
-

b) Study of Market For Sanitary Sewer

Conclusions:

- a) Sewer service is concentrated in metro area (90 %) and 10 % in urban areas, 47 percent of those with water service have sewer,
- b) Reports by A y A contain some inconsistency that carry over to projection of customers and makes it necessary to find forms of "Global estimation" to avoid, up to a point, those inconsistencies,
- c) The two types of adjustments applied to the projection of customers, with purpose to reconcile to the philosophy of new billing system

Recommendations:

- a) SNE should require A y A to purge the billing to avoid monthly inconsistencies in billing summaries since these are the basic data for statistical analysis to support the revenue projection. Also it must be insisted that the billing summary sent be considered official for all analysis SNE will do,
 - b) A Y A should send the following monthly statistics to SNE
 - customers with flat rates (block service) distributed in categories, level of use, and area including cubic meters consumed,
 - inactive customers by type of service, category, and area
-

c) Market Study of Aqueduct

Synopsis

- Analysis of market users calculated for the 1990 - 1994 period by simple linear regression,
- Consumption in cubic meters majority in lowest block less than 41 cu meters,

- Present and projected revenues,
- Comparison of market figures presented by A y A and those of SNE,

Conclusions:

- a) Some inconsistencies in numbers presented, due to different methods of projections Need to standardize methods
- b) Adjustments provoke variations in projections of revenue,
- c) A y A (water company) does not meter all customers 17 percent customers pay flat rate, but many are large users, for example, government offices, and should be metered,
- d) Revenues from new proposed rates are seriously underestimated by A y A because some communities are left to pay special rates Some of these places already are off special rate, but it is not projected in revenues,
- e) With new rates, A y A will increase revenue in 1991 by 72 percent and in 1992 by 95 percent

Recommendations:

- a) Improve the billing system to avoid monthly discrepancies in analysis,
- b) A y A should send monthly to SNE the following items
 - users of special tariff, and
 - users on flat rate

Without reviewing the detailed analytical methodology, modeling assumptions, and quality of the input data, it is inappropriate to comment on the quality of these market research studies However, auditors did notice that the staff were not provided with any formal computer models, training, hardware, or software to perform such complex market research studies

3 4 PRESENT ORGANIZATIONAL STRUCTURE

Figures 3 1, 3 2 and 3 3 show the current organization of the Technical, Economic Studies, Finance, and Statistical Departments Existing organizational structures of different departments evolved over time in response to the regulatory functions of SNE Nevertheless, a number of organizational differences and duplication in data gathering efforts do exist These have resulted from the unique historical development of each department, different philosophies of management, and the particular requirements of their operating environments While the differences may appear to be subtle in nature, they are significant impediments to the effectiveness of the present system

Current methods of operation for all three department are discussed below

TECHNICAL DEPARTMENT

This department includes the following three sections (a) Rates, (b) Electricity Control, and (c) Telephone Control Each section has several units, as illustrated by Figures 3 4, 3 5 and 3 6

The staff of the Technical Department, along with legal counsel assigned to rate cases, have the responsibility of providing the Board of Directors (of SNE) with analyses and recommend-actions regarding how the regulated utilities can provide adequate and reliable service at minimum cost to the ratepayer A major role of the professional staff is to bring engineering, economic, and general regulatory expertise to bear on utility proposals, projects, and expenditures

The staff of this department must understand the technical operations of the regulated entities, as well as regulatory theories and practices affecting each industry They must be able to present their funding recommendations and advice to the Board of Directors in a professional and persuasive manner

Presently, the role of the Technical Department is limited to the reactive review of utility proposals The staff does not pro-actively analyze utilities' expansion plans nor does it recommend improved and more efficient alternatives for utility performance Additional functions of this department are meter testing, customer disputes,

FIGURE 3.1
Present Organizational Chart Of The
Technical Department

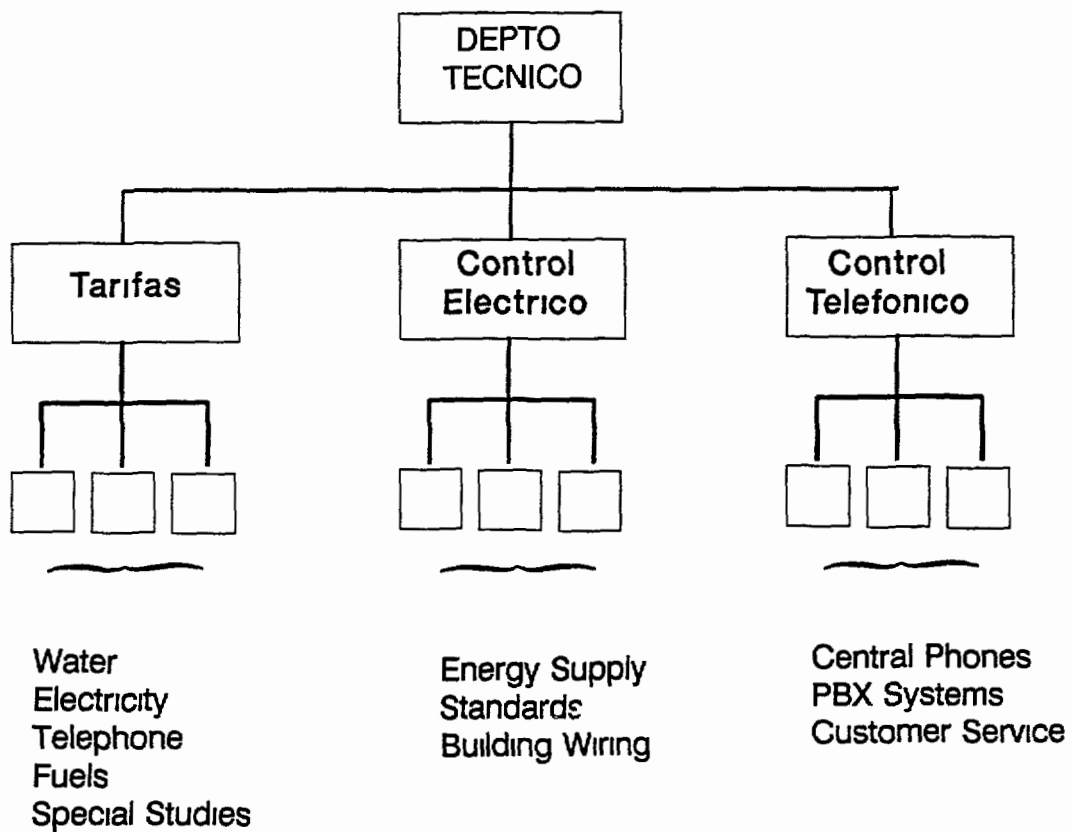


FIGURE 32
Present Organizational Chart Of The Economic
Studies And Financial Department

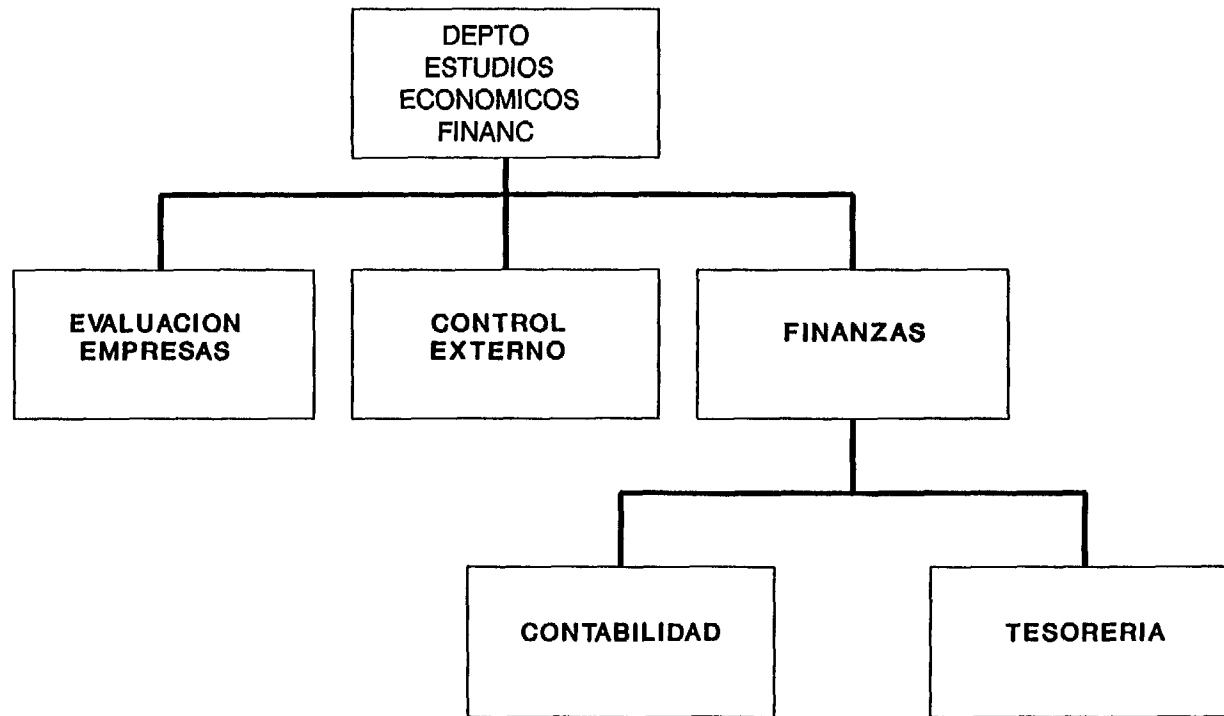
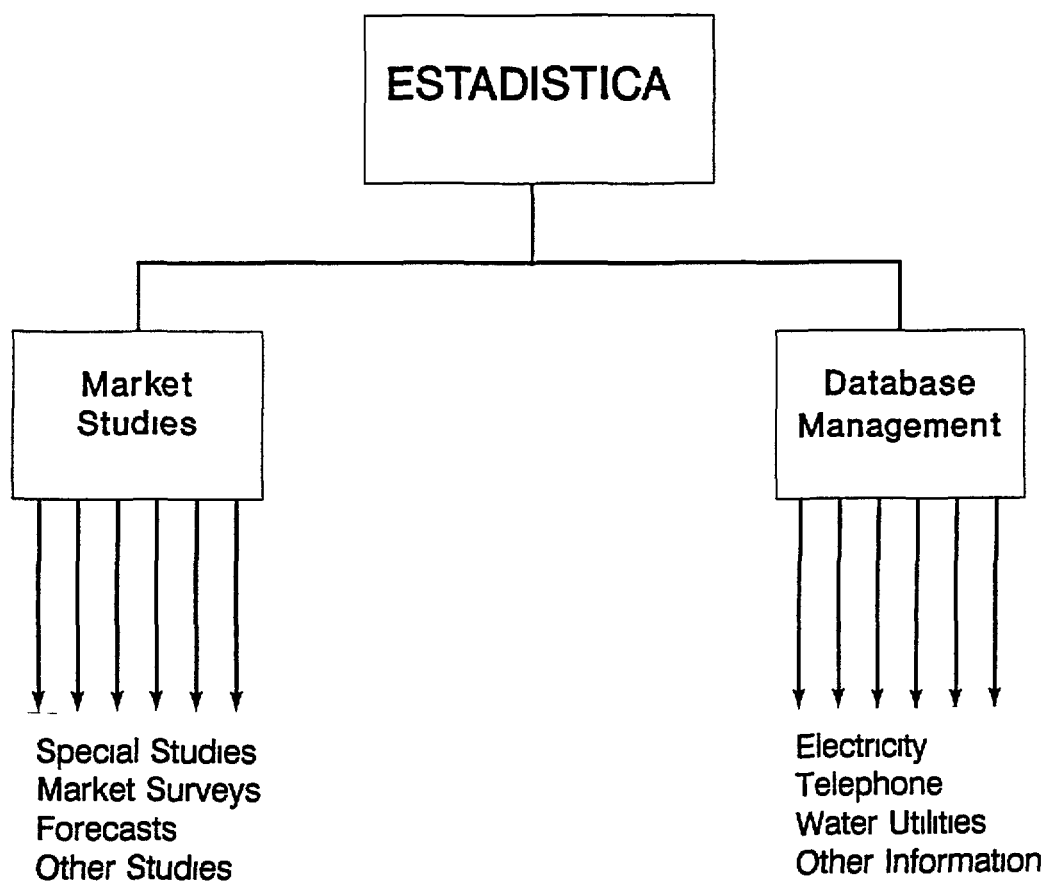


FIGURE 3.3
Present Regulatory Functional Duties
Of The Statistical Office



measurements, standards, and building electrical wiring and plan inspections

In making recommendations, the Technical Department's staff rarely consider the interests of the ratepayer over the long-run or the macro-economic impact of their policies. The Technical Department's staff represents both the current utility ratepayer and future ratepayer. All studies reviewed by this auditor indicate micro-level analyses of rate cases or retroactive financial audits. Therefore, the staff should be sensitized to the impacts imposed on future utility customers when analyzing current utility expenditures and investment requirements.

The detailed functional description and duties of all staff are documented in the **Survey Forms - Part II** of this report.

Department Staffing

The Department's resource are its people. It has approximately 76 authorized positions that include managers, engineers, economists, financial analysts, other regulatory analysts, and clerical support staff. The Technical Department's Director also serves on the SNE Board of Directors as an internal member.

General Staff Profile

| | |
|----------------------------------|----|
| Total Number of Department Staff | 76 |
| Number of Professional Staff | 30 |
| Number of Non-professional Staff | 46 |

Education / Training Profile

| | |
|----------------------------------|----|
| Master Degrees | 17 |
| Bachelor or Engineering Degrees | 13 |
| Technical Diplomas | 23 |
| General (Pre-University) Studies | 12 |
| High School Degrees | 6 |
| Elementary School | 5 |

The positions in each section in the Technical Department are given below

FIGURE 3.4
Regulatory Functions Of The Rate Office

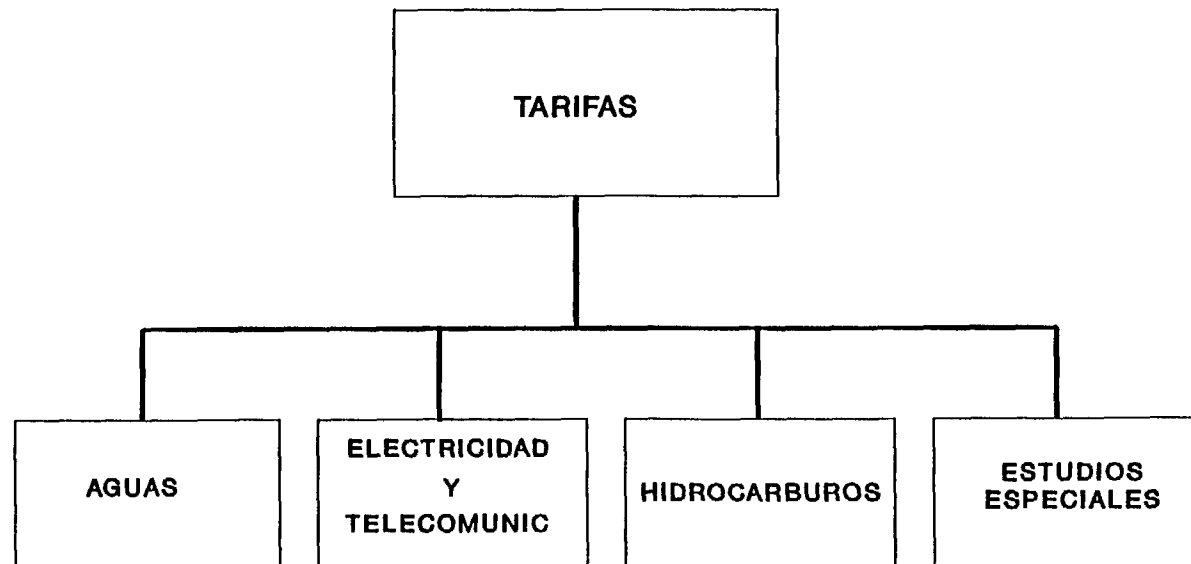


FIGURE 3.5
Regulatory Functions Of The Electricity Office

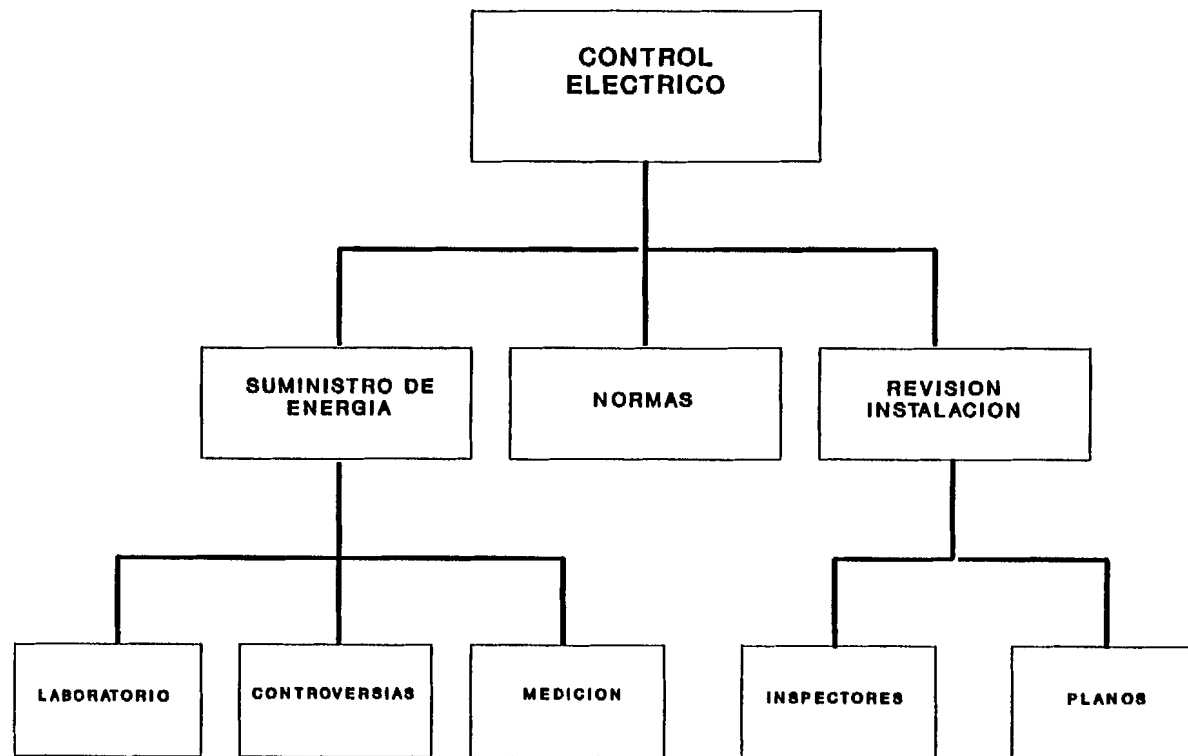
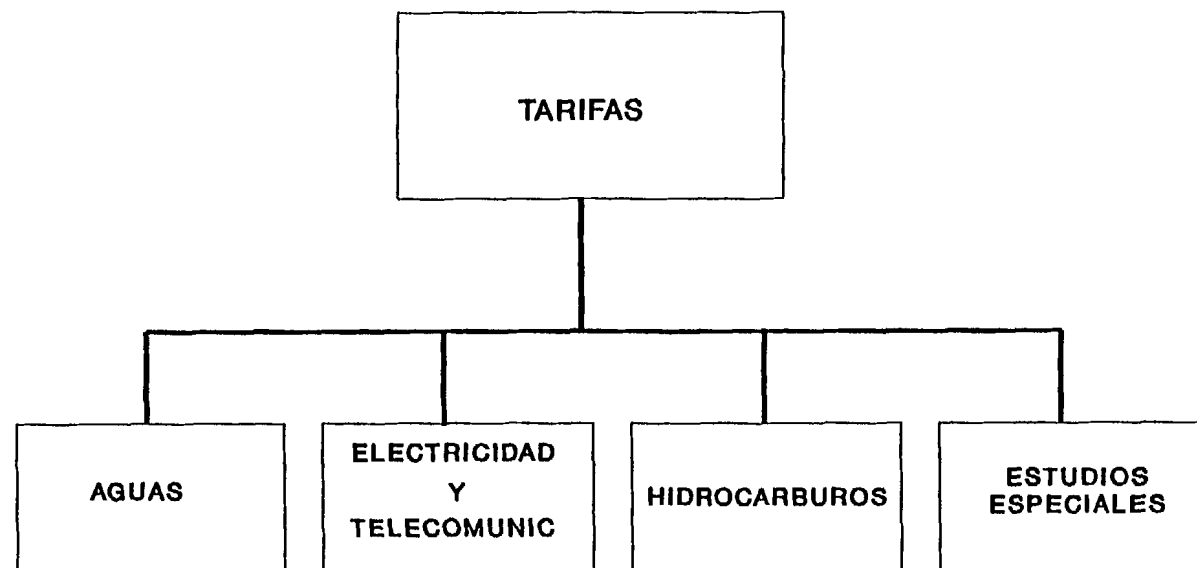


FIGURE 3.6
Regulatory Functions Of The Telephone Office



Tarifas

Electricity and Telecommunications Section

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 5 |
| Number of Professional Staff | 5 |
| Number of Non-professional Staff | - |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | 1 |
| Bachelor or Engineering Degrees | 3 |
| Technical Diplomas | 1 |
| Staff Training Program-Last 2 Years | None |

Aguas Section

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 3 |
| Number of Professional Staff | 2 |
| Number of Non-professional Staff | 1 |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | 1 |
| Bachelor or Engineering Degrees | 1 |
| Technical Diplomas | 1 |
| Staff Training Program-Last 2 Years | None |

Special Studies Section

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 4 |
| Number of Professional Staff | 3 |
| Number of Non-professional Staff | 1 |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | 1 |
| Bachelor or Engineering Degrees | 2 |
| Technical Diplomas | - |
| Staff Training Program-Last 2 Years | None |

Fuels Section

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 5 |
| Number of Professional Staff | 5 |
| Number of Non-professional Staff | - |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | 1 |
| Bachelor or Engineering Degrees | 1 |
| Technical Diplomas | 3 |
| Staff Training Program-Last 2 Years | None |

CONTROL ELECTRICO

General Staff Profile

| | |
|----------------------------------|----|
| Total Number of Staff | 44 |
| Number of Professional Staff | 10 |
| Number of Non-professional Staff | 34 |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | 2 |
| Bachelor or Engineering Degrees | 8 |
| Technical Diplomas | 34 |
| Staff Training Program-Last 2 Years | None |

Revision Instalaciones Planos

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 7 |
| Number of Professional Staff | 4 |
| Number of Non-professional Staff | 3 |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | - |
| Bachelor or Engineering Degrees | 5 |
| Technical Diplomas | 2 |
| Staff Training Program-Last 2 Years | None |

Revision Instalaciones Inspectores

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 4 |
| Number of Professional Staff | - |
| Number of Non-professional Staff | 4 |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | - |
| Bachelor or Engineering Degrees | - |
| Technical Diplomas | |
| Staff Training Program-Last 2 Years | None |

Normas

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 2 |
| Number of Professional Staff | 2 |
| Number of Non-professional Staff | - |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | 1 |
| Bachelor or Engineering Degrees | 1 |
| Technical Diplomas | - |
| Staff Training Program-Last 2 Years | None |

Suministro De Energia***General Staff Profile***

| | |
|----------------------------------|----|
| Total Number of Staff | 13 |
| Number of Professional Staff | 2 |
| Number of Non-professional Staff | 11 |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | - |
| Bachelor or Engineering Degrees | 2 |
| Technical Diplomas | 11 |
| Staff Training Program-Last 2 Years | None |

Laboratorio***General Staff Profile***

| | |
|----------------------------------|---|
| Total Number of Staff | 5 |
| Number of Professional Staff | - |
| Number of Non-professional Staff | 5 |

Education / Training Profile

| | |
|-------------------------------------|------|
| Master Degrees | - |
| Bachelor or Engineering Degrees | - |
| Technical Diplomas | 5 |
| Staff Training Program-Last 2 Years | None |

Controversias

No Staff At Present In This Unit

Medicion

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 2 |
| Number of Professional Staff | 1 |
| Number of Non-professional Staff | 1 |

Education / Training Profile

| | |
|---------------------------------|---|
| Master Degrees | - |
| Bachelor or Engineering Degrees | 1 |
| Technical Diplomas | 1 |

CONTROL TELEFONICO

Redes Y Enlaces

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 2 |
| Number of Professional Staff | 1 |
| Number of Non-professional Staff | 1 |

Centrales Telefonicas

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | - |
| Number of Professional Staff | - |
| Number of Non-professional Staff | - |

Servicio Al Abonado

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | - |
| Number of Professional Staff | - |
| Number of Non-professional Staff | - |

ECONOMIC STUDIES & FINANCE

The staff members of this department are expected to critically review utility expenditures and finance, making sure the utilities provide clear and adequate justifications for expenditures. The staff performs auditing and financial evaluations of regulatory entities. This is done as a part of the review of rate increase requests and in a reactive mode. The staff should search for those utility expenditures and revenue requests that can be reduced or eliminated without causing major adverse impacts on the adequacy and reliability of service. Each regulated entity has the burden to prove its additional revenue needs from the ratepayer. The staff's auditing and financial investigations should be critical of utility expenditures. When a utility's justifications are inadequate or uncertain to provide ratepayer benefits or impartiality, the staff should recommend disallowances of such expenditures and lowered utility revenues. At present, most of the analyses and audits are routine stamps-of-approval of utilities revenue requests. However, in the period of 1981-1991, SNE has disallowed various parts of requested rate increases which are reported to save rate-payers over 7.5 million colones.

The detailed functional description and duties of each staff are documented in the **Survey Forms - Part II** of this report.

Department Staff

The positions in these two sections are as follows:

Control Externo

General Staff Profile

| | |
|----------------------------------|----|
| Total Number of Staff | 10 |
| Number of Professional Staff | 8 |
| Number of Non-professional Staff | 2 |

Education / Training Profile

| | |
|---------------------------------|---|
| Master Degrees | 5 |
| Bachelor or Engineering Degrees | 3 |
| Technical Diplomas | 2 |

Evaluacion Empresas

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 4 |
| Number of Professional Staff | 4 |
| Number of Non-professional Staff | - |

Economic Studies (Dept Head Office)

General Staff Profile

| | |
|----------------------------------|---|
| Total Number of Staff | 4 |
| Number of Professional Staff | 2 |
| Number of Non-professional Staff | 2 |

**STATISTICS AND
SPECIAL STUDIES**

This department's function is to gather the necessary operational data of the regulated entities, --- electricity, water, telephone, transportation, etc, --- and to provide statistical analyses, future projections, and other market study results that are required for the regulatory functions. This office is also responsible for providing technical assistance to other offices in SNE for the rate-case studies, market surveys, and various other special studies as are required.

The detailed functional description and duties of all staff are documented in the **Survey Forms - Part II** of this report.

There are total of 10 staff positions in this department.

The positions of this department are as follows

General Staff Profile

| | |
|----------------------------------|----|
| Total Number of Staff | 10 |
| Number of Professional Staff | 5 |
| Number of Non-professional Staff | 5 |

Education / Training Profile

| | |
|---------------------------------|---|
| Master Degrees | 3 |
| Bachelor or Engineering Degrees | 2 |
| Technical Diplomas | 5 |

4.0 PRELIMINARY RE-ORGANIZATIONAL STRUCTURE OF SNE

4.1 BACKGROUND

This section is intended to provide a preliminary framework for the re-organization of SNE as well as a discussion of the possibility of using alternative approaches for regulating utilities in Costa Rica. The underlying motivation is to improve the overall effectiveness of SNE and the viability of the regulated utilities. Achievement of these two objectives is viewed as essential for sustaining and strengthening public confidence in the utilities and the regulatory services of SNE.

There are several approaches by which the SNE can direct, control, or influence decisions made by utilities or individuals. These mechanisms can be placed into four classes which are believed to encompass the range of alternatives. The four classes are

- **Direct Regulation**
- **Incentive or Market-Based Approaches**
- **Informational Approaches**
- **Mixed Approaches**

Each kind of approach has many variants. Table 4.1 lists the major variants for each approach. Our preliminary reorganizational structure of the SNE is based on a combination of these approaches. In the following sub-sections, a brief discussion of each regulatory approach and related variants is included.

A. DIRECT REGULATIONS

The major components of direct regulation are performance standards, specification standards, and case-by-case permits or approvals.

1) *Performance Standards*

Performance standards are regulations that require certain results or outcomes. Performance standards may be set with regard to feasible or commercial technologies that may allow them to be met, but, at least in theory, do not require that specific technologies be used for compliance.

Example: Amount of pollutants per year into the environment

TABLE 4.1

Regulatory Approaches And Their Major Variants

| | |
|-----------|---|
| A. | DIRECT REGULATIONS |
| | <ul style="list-style-type: none">• Performance Standards• Specification Standards• Case-by-Case Permits or Approvals |
| B. | INCENTIVE APPROACHES |
| | <ul style="list-style-type: none">• Taxes (user charges, fees)• Subsidies• Liability measures |
| C. | INFORMATIONAL APPROACHES |
| | <ul style="list-style-type: none">• Disclosure• Education• Voluntary Compliance |
| D. | MIXED APPROACHES |
| | <ul style="list-style-type: none">• Marketable Permits• Surcharges• Combinations of the above or others |

2) *Specification Standards*

Specification standards are regulations that require certain technologies or design practices, leaving the results or outcome flexible.

Example. Electrical Wirings of Building

3) *Case-by-Case Permits or Approvals*

In this case, specific conditions are taken into account and regulatory approvals are frequently given on a uniform basis for a region or utility industry

Example Tariff approvals based on a rate-of-return criterion

4) *Other Regulations*

Direct regulations have numerous forms and dimensions. Some deal with information reporting and recordkeeping and may differ in terms of their penalties for noncompliance, monitoring frequency, auditing and inspection, and the procedures by which they are set

B INCENTIVE OR MARKET BASED APPROACHES

The major components of incentive or market-based approaches are taxes, subsidies, and liability measures. The common feature in all incentive approaches is that they act in a market-like manner and work with the market to alter the total costs or benefits of actions for firms or the public

1) *Taxes or User Changes*

A tax may be difficult to envision as a regulation, yet theoretically a tax might be designed to reflect the damage to the public. The tax would be both an incentive to improve safety, and a source of revenue which might compensate the victims

Example: There are some discharges into the environment that save the public money overall or some accidents that would be avoidable only at tremendous expense.

2) *Subsidies*

Subsidies work in an opposite manner than from taxes or user changes. By making an activity less expensive, they promote its adoption

Example A subsidy for adopting less polluting technology may lead to a reduction in pollution.

3) *Liability Measures*

Matters of social externalities or imperfect information tend to be problems traditionally known as tort liability matters when handled through the courts. There are three main mechanisms that come under the heading of liability measures

Law suits are one means of dealing with these problems. **Compensation funds** may be required by the regulatory agency to set up a pool or fund from which victims can be compensated for bodily injury or property damage. **Workmen's Compensation** is one example. **Insurance plans** are basically a means of pooling risk but can also have an impact on the apportionment of liability and, thus, on the incentives for avoiding injuries or claims

C. INFORMATIONAL APPROACHES

Informational approaches include measures that encourage better disclosure to the public, educate the consumer on facts or risks, or seek to persuade firms or the public to change their behavior. The reaction of the consumer, acting through demand and price mechanisms, will in turn create incentives or disincentives for actions by utilities or may directly represent the actions sought by policies

1) *Disclosure*

The philosophy behind disclosure measures is that fully informed individuals are able to make better decisions for themselves than uninformed individuals. A disclosure approach would require utilities to disclose the characteristics of their products or impacts of their environmental policies more fully and publicly

2) *Education*

Educational measures go beyond disclosure to seek to interpret information for the public, bring it more directly to the public's attention, or perhaps in some cases, even try to persuade the public to make a different assessment of its own welfare. Warnings of various kinds are ways to increase awareness of the importance of safety criteria in making choices

Example Warnings in front of an electrical panel or cigarette package

3) *Voluntary Compliance*

Jawboning is a term that has been coined to denote efforts by the regulatory agency to persuade the utility to take some action. As

applied to industries or utilities, jawboning involves government requests for firms to stop polluting, to improve efficiency, or to improve safety. The requests are for voluntary action but may entail an implicit threat that if compliance is not soon forthcoming a measure such as regulation or litigation may be taken.

D. MIXED APPROACHES

Mixed approaches involve combinations of the above or other approaches. In addition to the possibility of mixing any combination of approaches in a re-organized SNE, these approaches may include marketable permits and tax surcharges.

1) *Marketable Permits*

By issuing a limited number of permits, a regulatory agency can establish a ceiling on the amount of activity allowed.

Example: Pollution in a basin

2) *Tax Surcharge*

This approach allows a specified level of activity at no charge and imposes a surcharge for all activity beyond the set level.

Example: Emissions beyond a certain amount would be subject to a tax - Emissions Trading concept in the USA.

4.2 CRITERIA FOR REORGANIZATION

In order to re-organize SNE, it is recommended that the SNE establish a Task Force to estimate the cost impacts of all regulatory functions in terms of their effectiveness, efficiency, equity, and political feasibility.

Effectiveness involves the question of whether the means by which the SNE (or government) chooses to intervene will accomplish the objective it was designed to serve. More specifically, effectiveness normally encompasses the concepts of administrative feasibility and enforceability. The criteria by which to judge these two measures are

- **Resource constraints**

- **Informational constraints**
- **Detectability**
- **Compliance**

Efficiency from an economist's perspective would be defined as maximization of social welfare, conveniently defined as equalization of social costs and benefits at the margin. In many cases, direct regulation, which commonly carries with it the implicit objective of zero risk, may not be desirable.

Equity is a highly subjective concept but one that is nonetheless quite important. In most cases of health, safety, or environmental protection, an approach is judged to be equitable if standards of performance are uniform and the source that has created the need for government intervention bears the cost.

Political feasibility is an issue which cuts across the boundaries of a regulatory agency's effectiveness, efficiency, and equity. Political feasibility of a regulatory agency is dynamic. What might be acceptable under one administration may not be acceptable under another. Likewise the attitudes of the public change, as does the ability of special interest groups to influence the regulatory decision-making process.

Figure 4.1 attempts to summarize the above criteria which the recommended Task Force might utilize in the process of defining the functional duties of SNE.

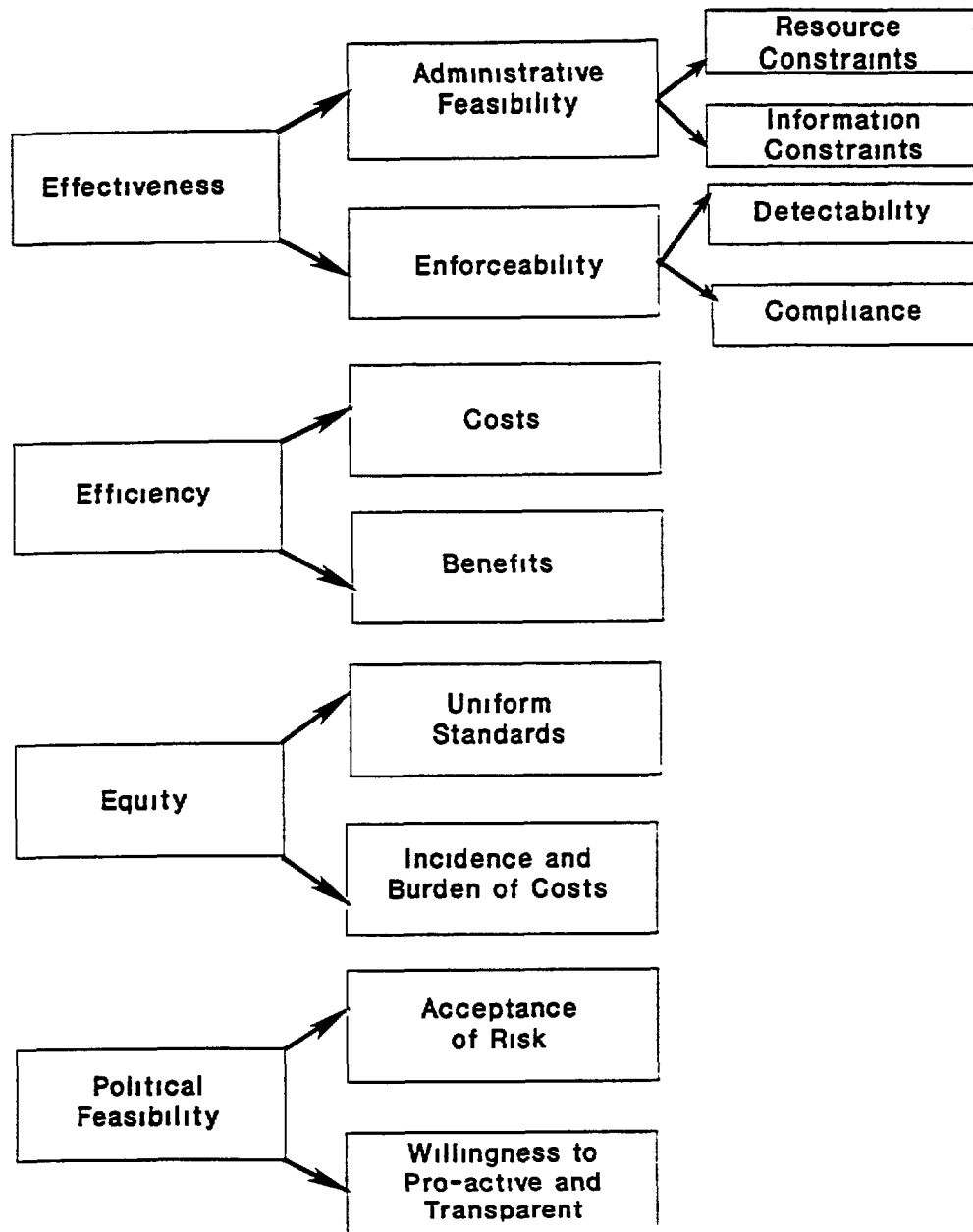
These criteria are provided solely to establish some broad guidelines for considering the various regulatory alternatives in regulating electricity, environmental impacts, water resources, transportation, fuels and other public services in Costa Rica.

In the following sections the preliminary organizational structure of SNE and a brief discussion of each Department's / Division's regulatory duties are provided.

4.3 RE-ORGANIZATION CHART AND REGULATORY DUTIES

The central NRECA recommendation is that SNE should move to prioritize regulatory functional duties to emphasize various departments or divisions based on expected outputs. The move to the new structure would entail an analysis of work processes and needs as

FIGURE 4.1
Criteria For Evaluating Reorganization Of SNE



well as available professional staff in various regulatory areas. The expectation is that in most divisions or departments this would involve formation of a series of teams comprising higher level and support staff with support jobs explicitly designed around the team's work.

The Board Of Directors

Figure 4.2 illustrates the conceptual or preliminary modified organizational chart of SNE. The SNE would be made up of five members of a Board of Directors appointed either by the President or Legislature, for terms of four or six years. One of the five would be elected as Chairman either by the President or by his/her fellow Board Members, and will preside at regulatory decision-making public hearings and other formal sessions.

Public Advisor Office

The Public Advisor's Office, under the direction of the Board of Directors, ensures that full and adequate public participation is secured in all of the programs and proceedings of the SNE. Measures for such participation include ensuring that timely and complete notice is disseminated to all interested groups and to the public at large, advising such groups and the public as to effective ways of participating in the SNE's proceedings, recommending to the SNE additional measures to assure open consideration and public participation in energy planning, site and facility certification, energy conservation, emergency fuel allocation proceedings, water resources allocation proceedings, tariff proceedings in all sectors, environmental issues, and regulations.

The Public Advisor's Office may be organized functionally in three separate Units or Sections:

- **The Secretariat/Docket Unit**
- **Consumer Affairs Unit**
- **Intervenor Compensation Unit**

The Secretariat/Docket Unit is responsible for informing the public of all SNE meetings and hearings. Additional responsibilities include maintenance of the formal records of SNE proceedings and the Master Calendar of SNE activities, and providing service of testimony upon parties in SNE proceedings.

The Consumer Affairs Unit represents consumers who have problems with utility companies under the SNE's jurisdiction. When this unit receives a complaint, they will take the issue up with the utility or

FIGURE 4.2
Preliminary Reorganizational Chart of SNE

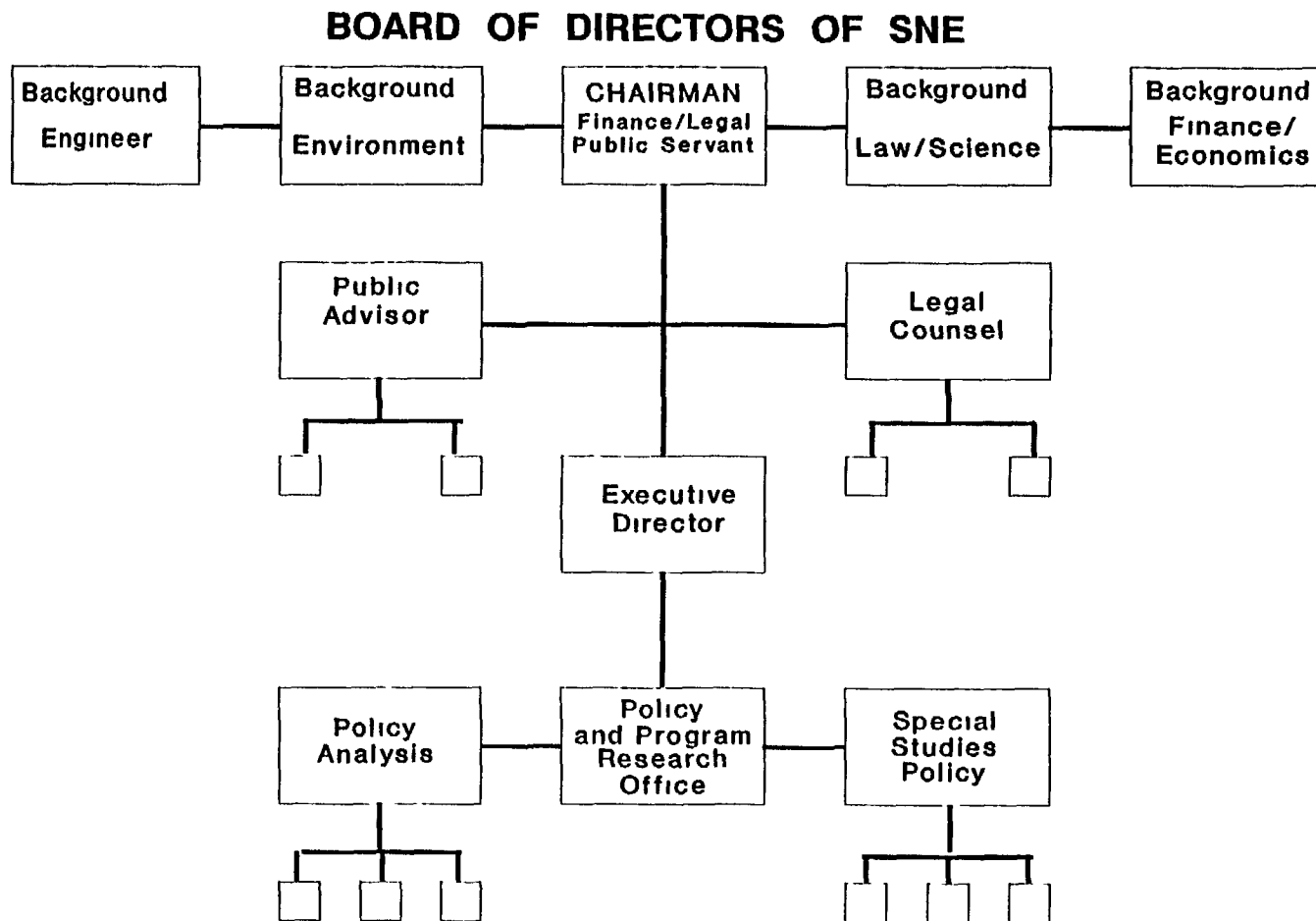
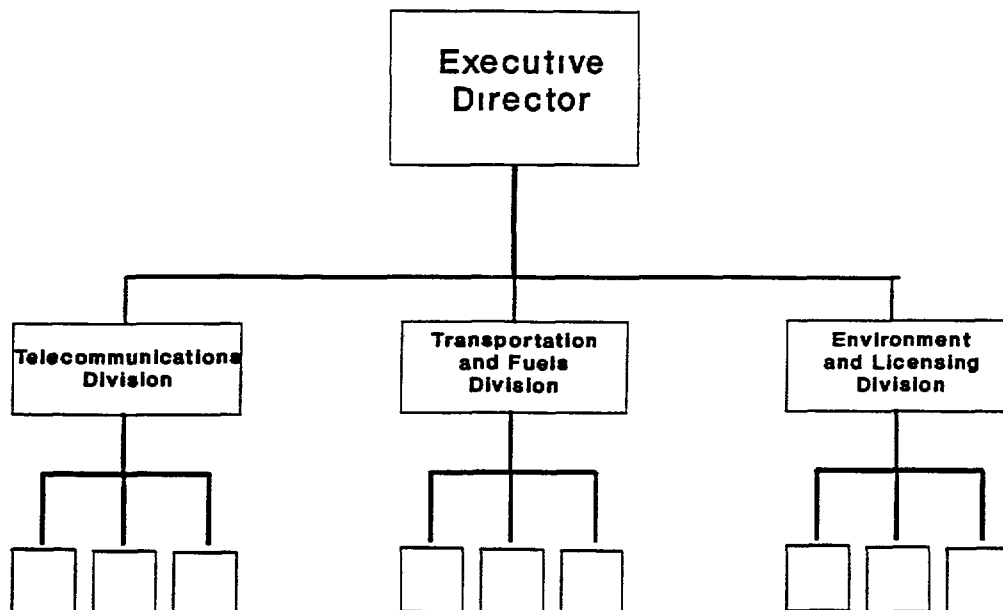
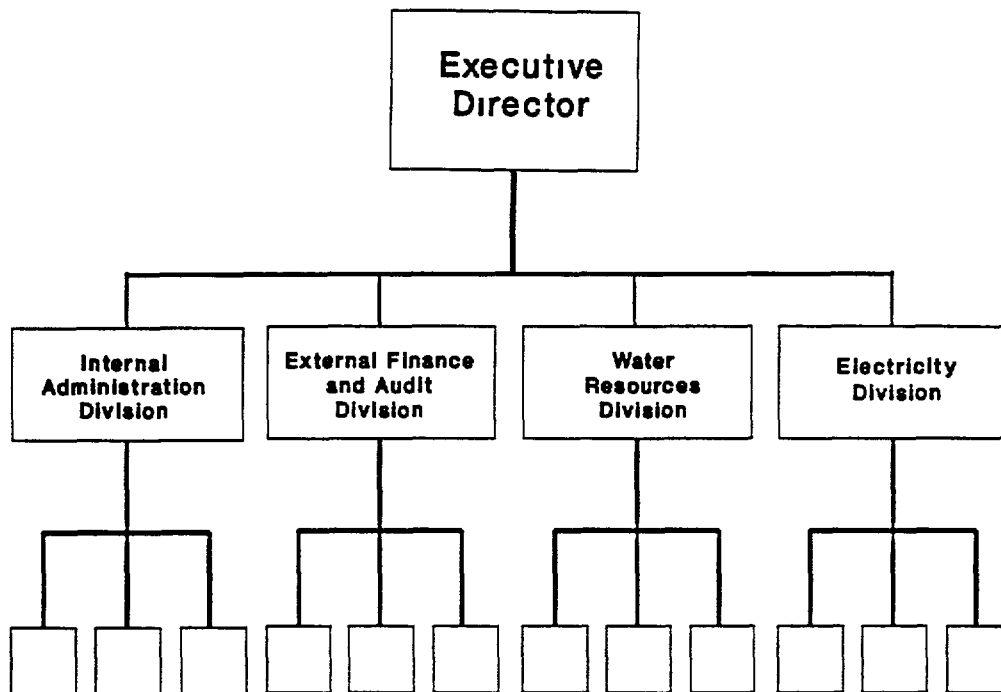


FIGURE 4.2
Preliminary Reorganizational Chart of SNE
(Continued)



company and try to settle it informally in accordance with the utility's tariff rules and SNE policies. In addition to disputes, this unit will answer all inquiries from the public with reference to the companies, tariffs or other sources.

The Intervenor Compensation Unit will provide free legal services or funds to consumers who may not have the financial resources to file a legal complaint against the SNE, regulated companies, or utilities.

Figure 4 3 illustrates the organization of the Public Advisor's Office of the SNE.

Legal Counsel Office

The Legal Counsel's Office, under the direction of the Board of Directors, provides legal support to all SNE activities. Responsibilities include participation in the processing of licenses for energy facilities, drafting regulations and orders relating to the SNE's statutory obligations in the fields of energy supply and demand assessment, energy conservation, standards and codes, and water resource development and allocation. The Legal Counsel Office will also be responsible for analyzing of legislation, and representing the SNE before the Congress and legislature.

The responsibilities of this office may be functionally divided into the following four categories:

- **Staff Legal Counsel in SNE Proceedings**
- **Legislative Proceedings**
- **Enforcement and Drafting of Regulations**
- **Advisory and Appellate Process**

Figure 4 4 illustrates the functional duties of the Legal Counsel's Office.

Office Of Executive Director

The Executive Director will perform duties at the direction of the Chairman of the Board of Directors and in conformance with the policies and guidelines established by the SNE. The Executive Director's responsibilities will include, but not be limited to:

FIGURE 4.3
The Public Advisor Office

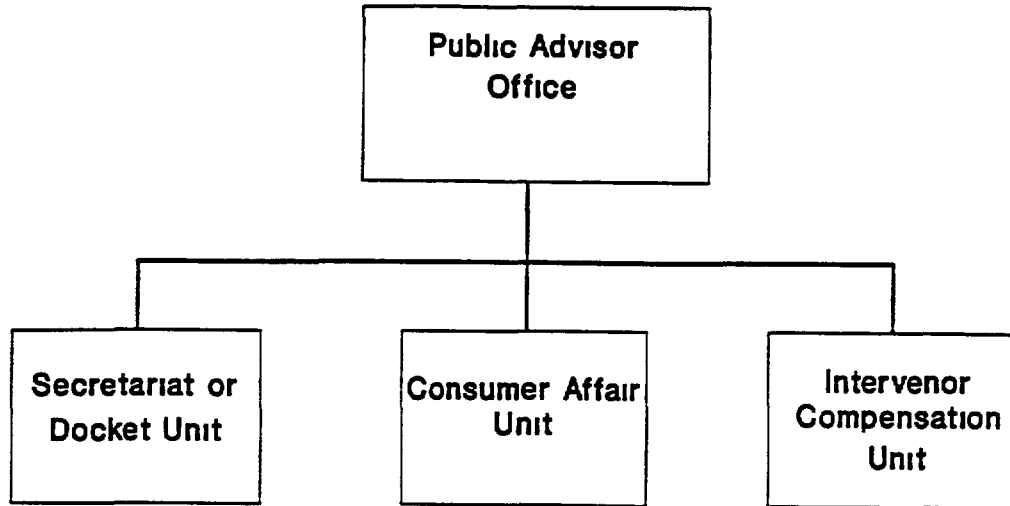
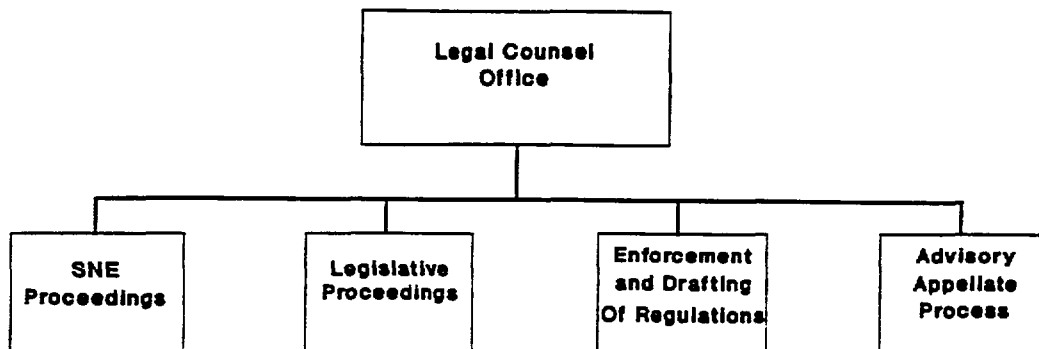


FIGURE 4.4
The Legal Counsel Office



- a) continually evaluating and modifying staff programs and priorities to meet the SNE goals,
- b) negotiating and discussing with industry, utilities, central and local governments the successful coordination and implementation of regulatory programs,
- c) presenting staff proposals/evaluations to the Board of Directors for review and approval,
- d) meeting with members of the public, representatives of various interest groups and utility liaisons to ensure the flow of information regarding current SNE programs,
- e) overseeing daily operations of the divisions and the Director's Office staff functions

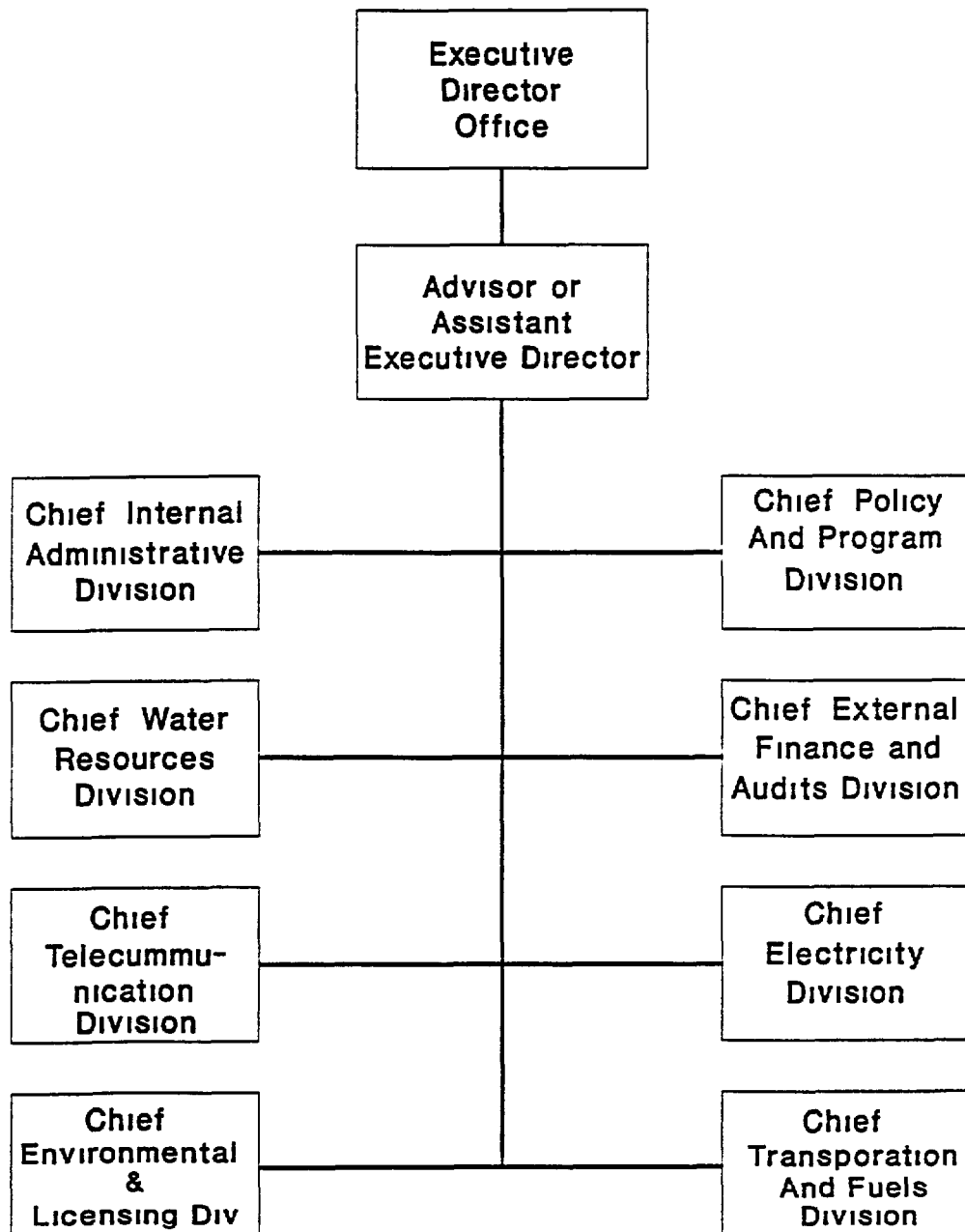
All Division Chiefs will report to the Executive Director of SNE
Figure 4 5 illustrates the organization of the Office of The Executive Director

Policy And Program Research Division

The Division of Policy and Program Research is a group of professionals with diverse, multidisciplinary backgrounds who will have the following five major areas of responsibility

- a) Analyses and evaluation of existing and proposed programs and main projects,
- b) Evaluation of impacts of national and international policies affecting production, processing and use of fossil fuels and other energy sources, impacts on transportation sector, and development of policy and program recommendations in areas where the SNE has general energy analysis, planning and advisory responsibilities,
- c) Analyses of changes or trends in regulation of environmental and water use policies and development of procedures integrating environmental assessment with policy, planning, and project approval processes,
- d) Development of new Standards and Codes for energy conservation, safety and environmental health hazards ,

FIGURE 4.5
The Executive Director's Office



- e) Supervision, integration, and publication of Biennial Status Reports on a) Electricity, b) Water Resources, c) Transportation, d) Telecommunication, and e) Environment

The responsibilities of this Division may be functionally divided into the following two offices

- **Policy and Program Office**
- **Research and Special Studies Office**

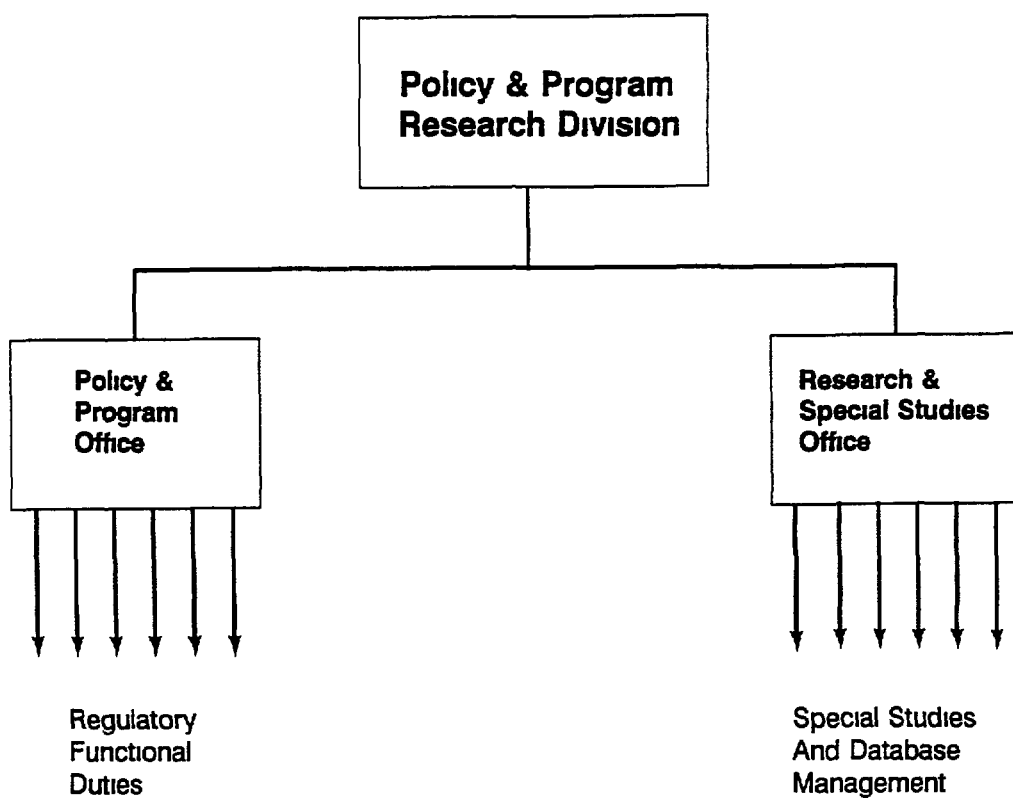
The Policy and Program Office will have the following responsibilities

- Interdisciplinary policy analysis (e g deregulation policies for telecommunication, electricity and transportation),
- Periodic review and critique of SNE policies, programs, and procedures where circumstances are changing,
- Staff support to the Executive Director and Board of Directors for special limited term projects,
- Review and analysis of legislation, and regulations, and
- Representation of the SNE or Executive Director before other ministries, the Legislature, or Congress, as required

The Research and Special Studies Office will have the following responsibilities

- Analyses and investigations of the status of the technologies for energy, telecommunication, water resources, and transportation for the cost-effective applications in Costa Rica,
- Development of Standards and Codes for energy conservation, energy efficiency improvements, public health and safety,
- Drafting of new regulations for electricity, water resources, transportation, telecommunication and environmental matters,
- Data Base management of electricity, transportation, environmental burdens, telecommunications, water resources, and past financial performances of utilities,
- Periodic retrospective analyses of utilities' performance in technical, financial and environmental areas,

FIGURE 4.6
The Policy And Program Research Division



- Special studies as required by the SNE to re-evaluate its policies and programs in the areas of revenue allocation, tariff design criteria, transportation, environmental emissions standards, and others

Figure 4.6 illustrates the organizational chart and functional duties of the Policy and Program Research Division

Electricity Division

This Division will be responsible for monitoring the implementation of SNE decisions relating to electric utilities. This Division will have an appropriate number of Units or Sections for processing and analyzing all electricity related matters, including tariff deviations, and monitoring and oversight of programs in the following areas

- **Tariff,**
- **Energy Conservation, Demand-Side Management Programs,**
- **Utility Planning of Supply and Demand Forecasts,**
- **Alternative Technology Applications**
- **Evaluation of Private Power projects;**
- **Fuel and Purchase Power Contracts Analysis;**
- **Ratepayer Impact Evaluation**
- **Utility Performance Monitoring**
- **Expert Testimonies, and**
- **Others as required**

This Division's staff will coordinate SNE activities in the electricity areas with other Divisions and will provide expert witness testimony, policy recommendations, and technical support in representing the SNE in regulatory hearings and before the Congress and Legislature

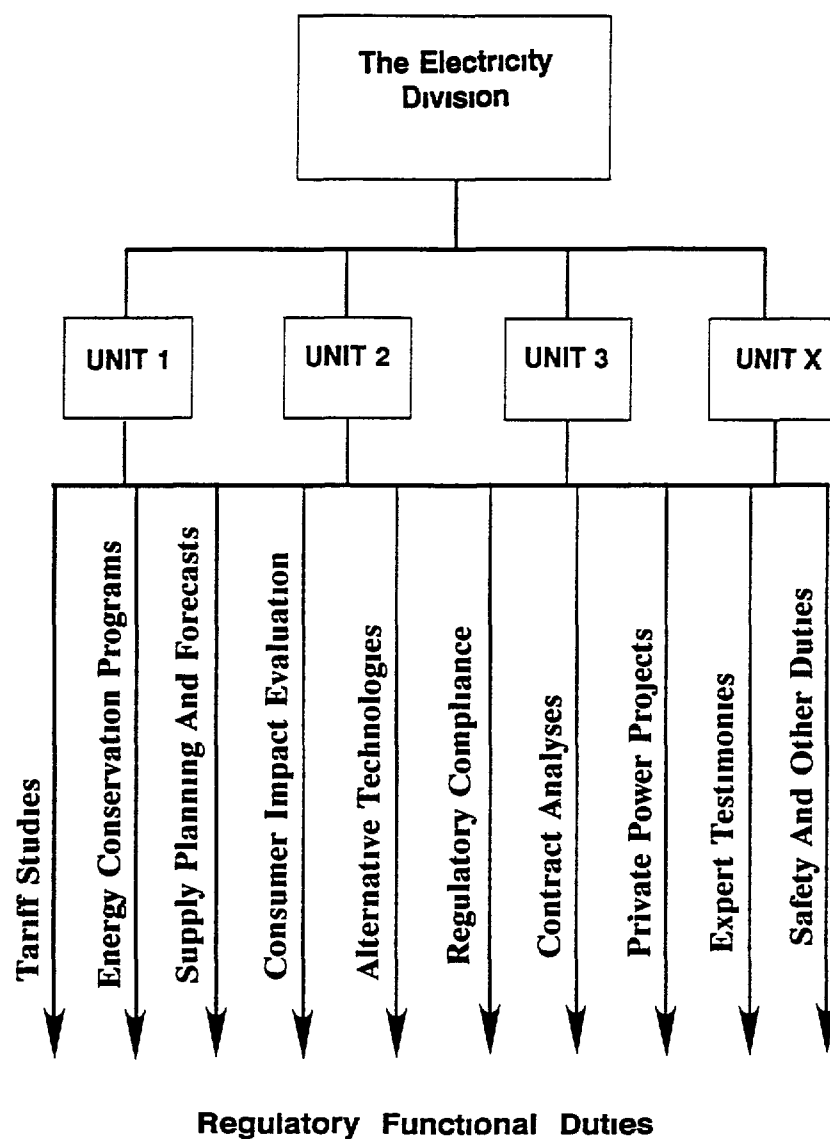
Figure 4.7 illustrates the preliminary regulatory duties of this Division

Telecommunication Division

This Division will regulate all aspects of telephone utilities, including radiotelephone and cellular mobile telephones in Costa Rica

The staff of this Division will review all telecommunications utility tariff filings, problems associated with customer connections, interconnection of customer-owned equipment, and other complex

FIGURE 4.7
The Electricity Division



problems. The staff will be responsible for analyses and development of generic cost of service plans and monitoring utility adequacy and quality of service. It will also oversee all compliance filings, both generic and those requiring public hearings, and will provide expert witness testimony in the SNE's regulatory proceedings.

In an advisory capacity, the Division will provide technical assistance to the Legal Counsel and the Board of Directors by developing regulatory issues, addressing data needs, and assisting in the preparation of SNE draft decision in contested proceedings.

Figure 48 illustrates the organizational chart and main regulatory functions of this Division.

Environmental And Licensing Division

The major responsibility of this Division will be the environmental impact evaluation of industrial and energy projects, monitoring of environmental compliance and regulations, and the certification of electrical generating power plant sites and related facilities. These facilities must meet the future energy needs of the country while ensuring that the activities necessary to accomplish this function are consistent with the required site specifications, in compliance with environmental regulations, as well as economic, social, ecological, health and safety criteria that are mandated by the national and international laws.

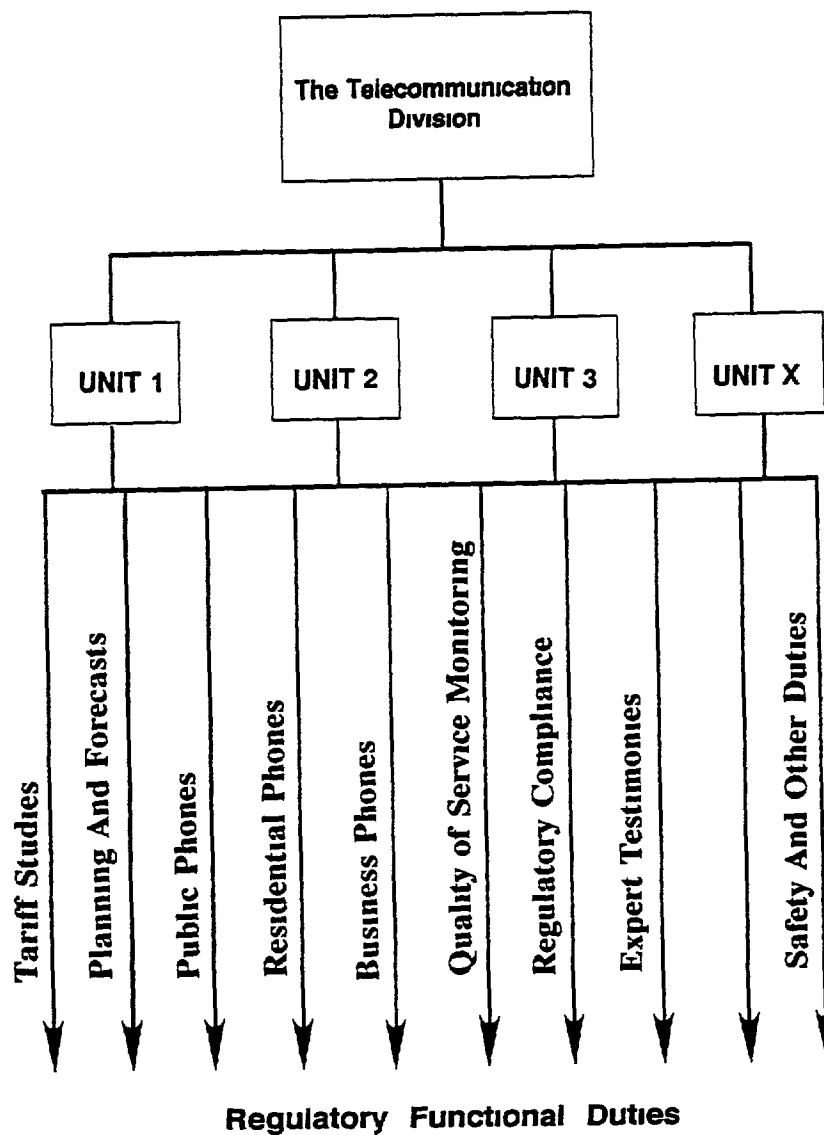
This Division can be functionally divided into the following three Units or Sections:

- **Licensing Unit**
- **Engineering or Technical Unit**
- **Compliance Unit**

The Licensing Unit will be responsible for the supervision and coordination of all applications for the certification of industrial and power facilities, and for the development, implementation, and maintenance of industrial, and energy facilities' licensing procedures.

The responsibility of the Engineering or Technical Unit will be to provide the technical expertise necessary to review and evaluate information pertaining to a majority of technical areas in the application submitted to the SNE for certification. This Unit will also be responsible for providing a technical evaluation of existing and new

FIGURE 4.8
The Telecommunication Division



standards, as well as developing acceptable environmental criteria and guidelines for both the facility licensing process, and conducting specific research projects

The Compliance Office will compile and evaluate all existing and new regulations and standards which affect the design, construction, and operation of all industrial facilities and electrical generating power plants, and will develop for implementation inspection and enforcement procedures, as well as monitoring systems which will ensure compliance with those standards and regulations adopted by the SNE. The staff will also assist in the review and evaluation of all applications for certification.

Figure 4.9 illustrates the overall organizational chart and functional duties of this Division.

The Transportation And Fuels Division

The SNE is responsible for regulating transportation vehicles and prices of all petroleum derived fuels in Costa Rica. This Division's staff will regulate transportation rates, services, and facilities, and provide automobile emission and safety certificates.

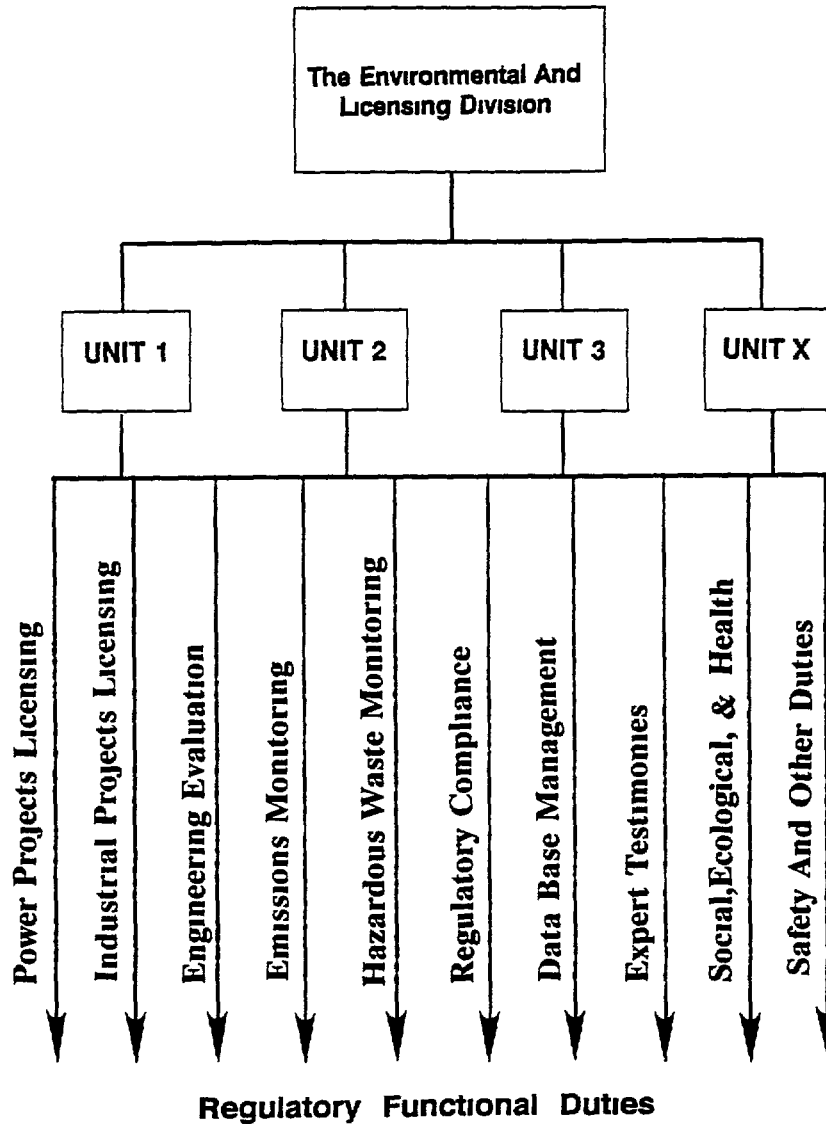
The main responsibilities of the Transportation and Fuels Division will be to secure public rates and services which are just, reasonable and free of unlawful discrimination, enforce established rates, rules, regulations and statutory requirements, and collect statutory fees and issue licenses to operate safe transportation services. These responsibilities will be discharged through presentations in proceedings before the Board of Directors of SNE, and through administrative staff action.

The staff of this Division, consisting of professional, technical, and support personnel, may be organized into the following three units:

- **Transportation Economics and Analysis Unit**
- **Compliance and Enforcement Unit**
- **Tariff and License Unit**

The Transportation Economics and Analysis Unit will monitor Costa Rica's transportation industry and recommend programs to promote safety and economic health throughout the transportation sector. The staff will analyze and prepare reports on public transport policy and

FIGURE 4.9
The Environmental And Licensing Division



issues, urban transport issues, vehicle fuel economy, and forecasts for various fuels

The Compliance and Enforcement unit will conduct comprehensive investigations to determine whether the services performed and the rates assessed by the public carriers (bus, trucks, railways and airlines) and related businesses are in compliance with the tariff requirements and SNE general orders. This unit may be divided into the following four sections

- **Compliance Section**
- **Private Vehicle Section**
- **Passenger Vehicle Section**
- **Enforcement Section**

The Tariff and License Unit will permit and recommend approval or denial of formal applications for motor vehicle operating authority. This unit will make recommendations on requests for tariff adjustments and it will also have the authority to take administrative action to suspend, reinstate, or revoke operating licenses in response to non-compliance with statutory and administrative requirements. This unit can be functionally sub-divided into the following two sections: Tariff section and License section.

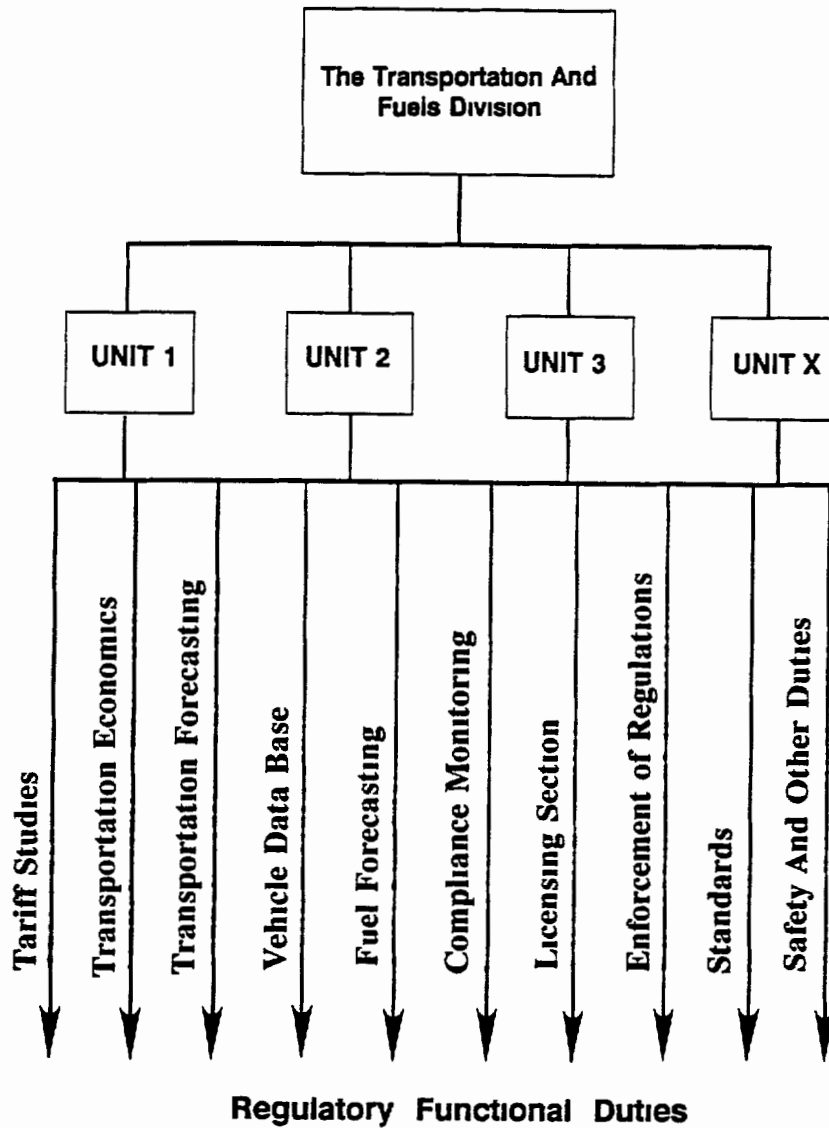
The Tariff Section will suspend faulty tariff and contract filings and analyze and approve applications for tariff increases sought by public carriers. In addition, this section will participate in public hearings in connection with tariff matters. The License Section will analyze and process applications for carrier permits and Certificates of Public Convenience and Necessity. It will also review carriers' plans to comply with various safety requirements.

Figure 4.10 illustrates schematically the organizational chart and functional duties of this Division.

The Water Resources Division

This Division will be responsible for the implementation and enforcement of all water resource related regulations, including hydro-projects impact evaluation and sewer systems. All water utilities' general rate increases, either by formal application or advice letter, will be processed by this Division. The staff will analyze and make

FIGURE 4.10
The Transportation And Fuels Division



recommendations on all rate matters and the level of water and sewer services to all the regulated water utilities in Costa Rica

The Advisory and Compliance section of this Division will provide direct support in the areas of policies and procedures related to water quality, water supply, rate design, legislative bill analysis, compliance, and training. This section will also be responsible for maintaining the current water utility tariffs, which include the review of all water tariff and deviation filings

This division will also be responsible for assessing and making recommendations on applications for water right sales and the purchase or transfer of water and irrigation utilities

The main regulatory functions of this Division will include the following

- Piped Water Supply Systems,
- Tariffs,
- Quality Control, Standards, Design and Procedures,
- Sewer and Sanitation Technologies,
- Flood Control,
- Waste Stabilization,
- Irrigation and Hydro projects,
- Regulatory Compliance, and
- Monitoring of Soil Erosion and Sedimentation Problems

While we have included the water regulatory function in the new SNE organization, the audit team is not convinced of the viability of developing and maintaining sufficient expertise within SNE in this critical area. With an organization such as SENARA having certain revenue generating functions, and much more expertise than SNE, it may be wise to examine the potential for relocating this regulatory function

Regulation of the water sector is complex and should be subjected to a separate evaluation with expertise specifically qualified in this area. The potential for stream-lining SNE and reducing its financial burden has merit and should be investigated. SNE is now under-staffed and under-equipped in this regulatory area. Creating redundant capabilities within SNE would be counter-productive to the national financial and economic interests. The audit team recognizes its own limited ability to make firmer recommendations in this sensitive area. It does, however, recommend that the appropriate expertise be brought in as soon as practicable. It is not unusual to have separate electricity and water regulatory entities

FIGURE 4.11
The Water Resources Division

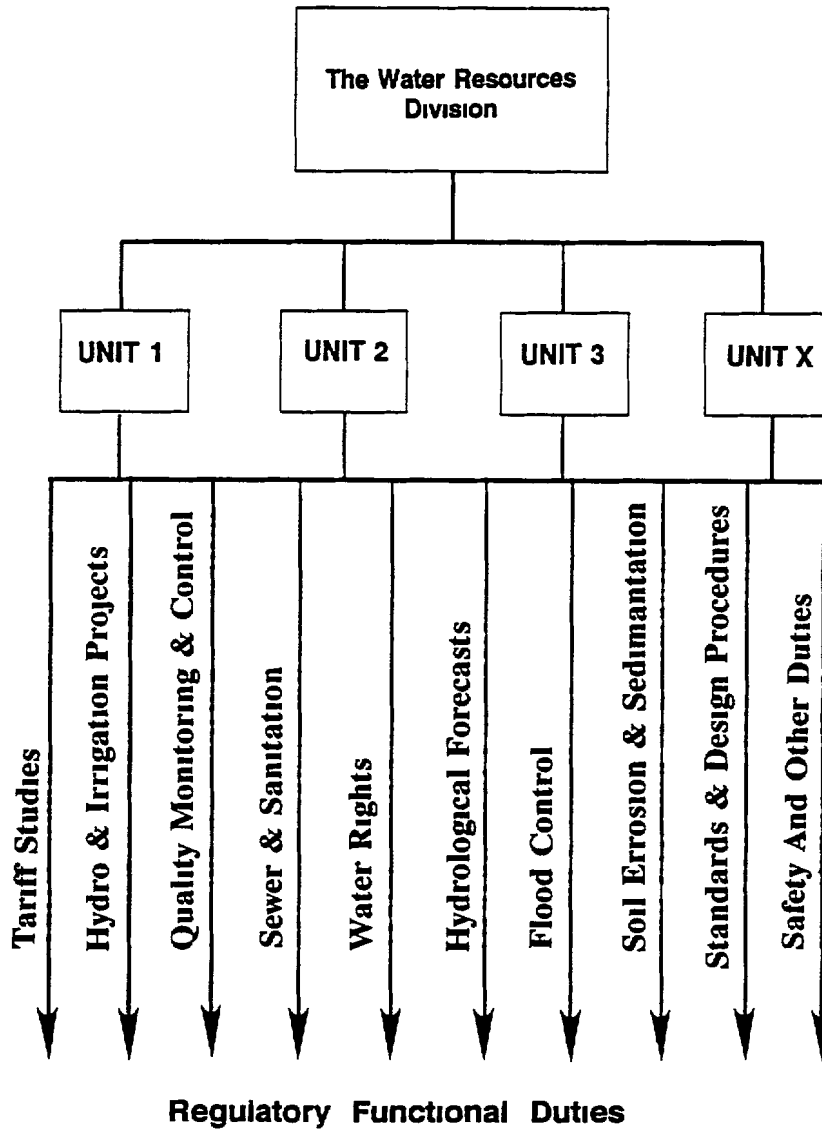


Figure 4.11 illustrates the various regulatory functions of this Division

External Finance And Audits

The primary function of this Division would be to act as a technical/financial advisor to SNE Directors, Legal Counsel, and the SNE's management staff on regulated utilities finance matters

This Division would also conduct financial compliance audits, perform special audits of electric utilities, water utilities, telecommunication utilities and other regulated companies. This Division will review all project financing arrangements as they relate to and affect the financial performance of regulated utilities. Compliance audits of utilities will be conducted to assure compliance that specific orders relating to accounting or financial matters in various SNE decisions are being carried out. This Division may be functionally divided into the following three Units or Sections

- **The Financial Oversight Unit**
- **Auditing and Compliance Unit**
- **The Financial Records Unit**

The Financial Records unit will be responsible for preparing, disseminating, obtaining, filing, and maintaining official custody of the financial reports and other related documents required to be filed by regulated utilities and transportation companies under the jurisdiction of SNE

Figure 4 12 illustrates the regulatory functional duties of various units in this Division

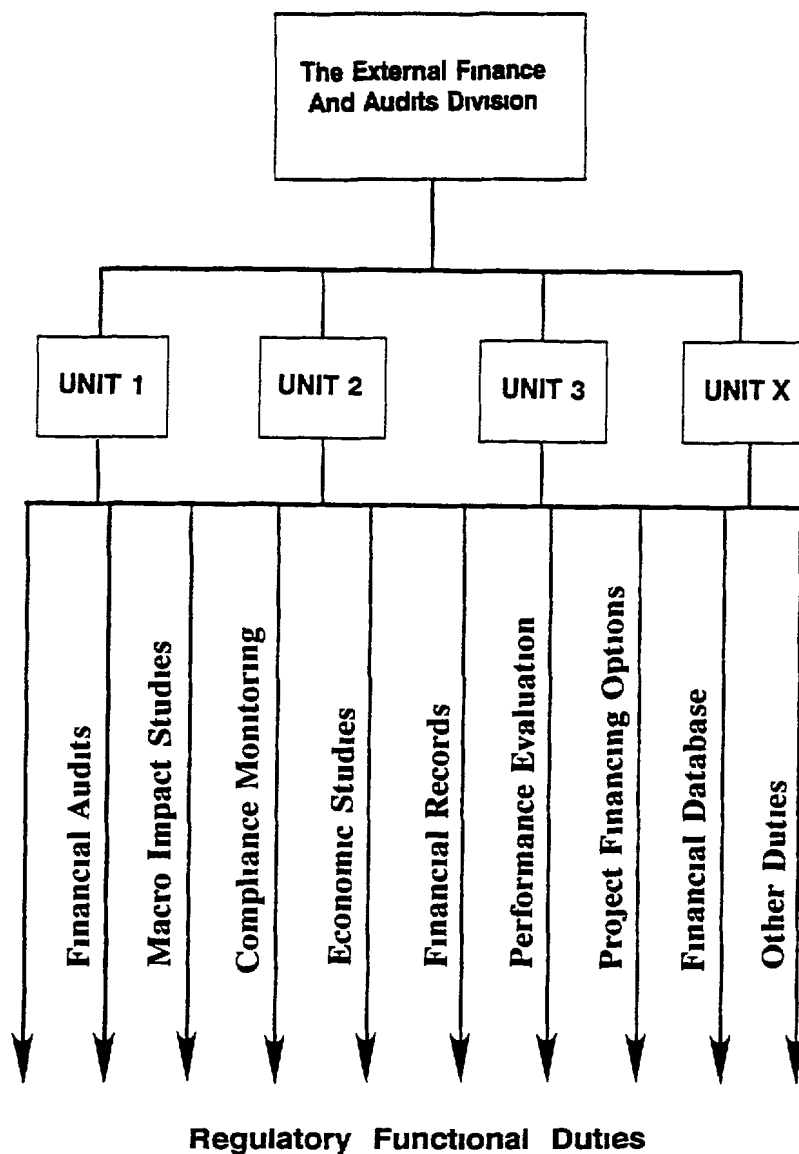
Internal Administration Division

The Internal Administration Division will support the SNE as a whole by providing a full range of administrative, business, and office services required to accomplish the primary responsibilities of meeting the goals of the SNE

This Division may be functionally divided into the following six Units or Sections

- **Office of Fiscal and Program Support Services.**
- **Office of Business and Technical Services.**

FIGURE 4.12
The External Finance And Audits Division



- **Personnel Office**
- **Computer Systems Office**
- **Contract Services Office**
- **Program Planning and Evaluation**

As an integral part of the Division, all above units will have a wide variety of staff functions and provide general support for the SNE

1) *Office of Fiscal and Program Support Services*

Accounting Office - maintains fiscal records and prepares expenditure reports to assure fiscal control and management of the SNE budget. On an as needed basis the Accounting Office will record costs by project level.

Budget Office - prepares, executes, and monitors the SNE budget. On an ongoing basis, the Budget Office maintains position control through the Request for Personnel Action procedures, maintains control of equipment and travel expenditures, and analyzes and makes recommendations on current and projected expenditure levels and workload.

Management Analysis Office - is instrumental in the design and implementation of procedures in administrative areas. Additional responsibilities are the maintenance of the SNE Administrative Manual and coordination with the governmental agencies.

2) *Office of Business and Technical Services*

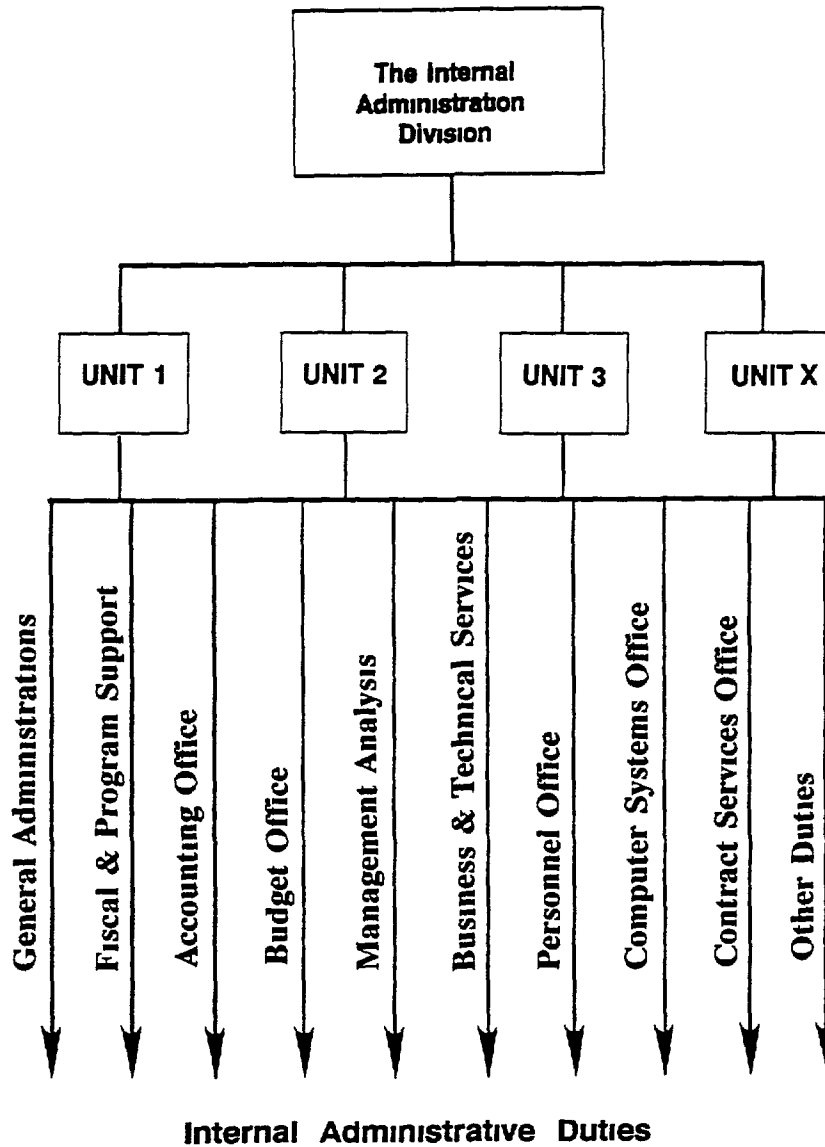
Library - provides preliminary reference assistance, operates a routing system for incoming periodicals, and provides an interlibrary loan service.

Central Office Services - provides general and supportive services to line and staff organizations in the areas of typing, transcription, reproduction, forms design and control, mail/messenger, photocopying, publication and records management.

3) *Computer Systems Office*

The Computer Systems Office designs and implements data processing systems to meet SNE needs. It is responsible for providing consultation involving EDP and Local Area Network operations, functioning as an interface between the various

FIGURE 4.13
The Internal Administration Division



40

departments in SNE, and representing the SNE in EDP negotiations

4) *Contract Services Office*

The Office of Contract Services is responsible for the legal review of Contracts and Grants within the SNE

5) *Office of Program Planning and Evaluation*

This office develops and implements systems for planning and reporting SNE activities, reviews and evaluates SNE proposed program plans, monitors actual, as compared to planned performance, and assures development of work plans for new SNE activities

6) *Personnel Office*

The Personnel Office is responsible for developing and maintaining the Commission's personnel activities, identifying the training needs of each organizational unit, and developing the SNE's action plan for the employer-employee relations program

Figure 4 13 illustrates the organizational chart of various units or sections of this Division

SECTION 5.0 TRAINING AND PROFESSIONAL DEVELOPMENT NEEDS

5.1 Background

During the review of SNE's regulatory activities, the audit team also focused on the high priority issues of training and professional development needs for effective regulatory performance. On the basis of the survey results and audit team members' discussions with the SNE, it has been concluded that SNE presently does not have any policy that governs a **staff training and professional development program** to ensure the availability of a sufficient number of qualified persons to fill all the vacancies in key managerial and professional positions. SNE has not had the budgetary capability to fund extensive training activities. Any SNE reform must address the overall financial position in such a manner that funds can be dedicated to training. The audit interviews also indicated that SNE has not adopted any formal process or procedure to address succession and replacement in planning objectives. Due to the budgetary constraints, SNE appears to be assuming that the regulatory functions which are essential today will continue to be essential although its jurisdiction is expanding. The essence of a training and professional development program is to link staff potential with the regulatory position's need.

A systematic and comprehensive approach to training will benefit SNE's regulatory functions in two ways. First, a training program will enable SNE to provide more effective regulatory services in the short run. Second, the SNE staff will be able to respond more rapidly to the changing conditions surrounding regulatory activities. A formal staff training or human resource development program will benefit SNE in the following ways:

- It will ensure that management, technical, and administrative skills necessary to fulfill the legislative mandates of the SNE are developed and retained within the organization, and
- It will optimize the opportunity for personal development and work satisfaction among individual staff members.

The above issues, as well as the other findings of the audit, are discussed in more detail in the following sub-sections

5.2 Some Performance Issues

During the NRECA's audit, most of the SNE managers agreed that the regulatory functions under their jurisdiction should operate at higher performance levels. They could improve performance by incorporating proper training programs, but may not be able to do so for the following reasons

Physical Factors

- Staff members do not have adequate computing tools (i.e., computer hardware and software), and consequently the processing of regulatory filings is slow and takes more man-hours
- SNE staff is provided with an inadequate number of vehicles or methods of transportation and often have to walk or take public transportation
- The SNE lacks adequate measuring instruments and other tools

Institutional and Human Factors

- Staff does not have adequate academic backgrounds or training
- There are not enough staff members to enforce all regulations effectively
- Regulatory functional duties are not well defined
- Utilities are technically and politically stronger. Enforcement of a regulatory compliance plan will inevitably bring SNE staff into conflict with the staff of regulated entities
- For comparable jobs, salary levels at SNE are lower than the utilities

The above factors certainly limit the performance level at which SNE staff can operate. Training programs, designed only to help staff overcome their technical limitations, overlook the institutional constraints that managers, staff and departments face. For example,

low salary scales or frequent turn-overs are untouched by training programs Furthermore, the absence of effective regulatory compliance legislation will inhibit the performance of SNE staff

5.3 Developing Training Strategy

SNE management's attitude is crucial to the quality and efficiency of its training and professional development program Being a long-term activity and often competing with short-term technical and budgetary constraints and limited manpower resources, a staff training and professional development program will require top management support As an essential component of SNE's regulatory activities, a staff training program should be organized to meet the following requirements

- Programs should be based on an assessment of the regulatory functional needs and developed in line with the organizational objectives
- Programs should comprehensively and systematically enhance the skills needed by SNE management, engineers, economists, and administrative staff
- Training programs should be developed in phases The most critical regulatory functions and related analytical capabilities of staff should be addressed first
- Appropriate tools and equipment should be an integral part of the training program (for example computer software and hardware)

To develop a successful training and professional development strategy at SNE, the following issues also should be carefully considered

- Determine which regulatory functional constraints can be most successfully addressed through training
- Identify the training, tools, and equipment needs of specific categories of managers, staff, and others
- Determine the logical sequence of training segments and create an appropriate schedule,

- Integrate training into the budget process
- Plan for follow-up, monitoring, and evaluation of training investments

5.4

Categories of Training and Professional Development Programs.

Extensive efforts should be directed towards the development of training programs aimed at increasing the regulatory functional skills of all professional staff and enhancing all administrative areas. The training and professional development program should encompass all regulatory activities to strengthen the performance of managers and staff. The following six types of training should be considered by the SNE in the systematic training plan development. The distinctions among them are rather arbitrary and in some respects they overlap.

a) On-The-Job Training

The purpose of this type of training program is intended to develop staff skills at given levels of proficiency. It may be deemed short-term, routine, continuing, in-house, or on-the-job training for existing or new staff members. The objective of this type of training is to strengthen the technical skills of staff when they join the department or are to be upgraded. This type of training program may be used to certify continuing or increased staff proficiency within the same career path.

b) Supervised In-Service Training

This type of training is the most effective means of upgrading the skill levels of individual staff. To attain maximum success, the SNE must identify appropriate supervisors to provide the training, and convey to supervisors and participants, alike, the importance the department attaches to on-the-job training.

c) Formal On-Site Courses

Formal on-site courses are often appropriate mechanisms to strengthen individual skills. Formal on-site training courses can be provided at SNE to rectify the specific skill deficiencies of a department or group of staff with similar backgrounds and job assignments.

d) Workshops and Seminars

Workshops and seminars are less appropriate for individual training, but can be used to improve the effectiveness of department in their particular regulatory functional areas. For example, a seminar on the topic of "Regulatory Practices for the Disadvantaged", may explore the social policy initiatives by the utility regulators in various countries and therefore will enhance the knowledge of the tariff department's staff in this area.

Workshops are an excellent way to train managers and senior and middle-level technical staff.

e) Study Tours

Study tours are controversial training activities because of their cost, limited participation, and potential for abuse. SNE should consider study tours for the senior management level staff who have the authority to begin the process of changing the work practice and key policies.

f) Internships

Internships, in effect, provide extended in-service training with another organization. SNE should consider nominating junior staff who are not in critical positions as interns in other regulatory institutions in the U.S. or Europe. Internships can also be effective ways to train staff in new disciplines such as regulating environmental emissions. SNE should develop a program for a limited number of interns who can bring new ideas and skills, and interact productively with other national or international organizations concerned with utility regulations.

The development of a training program requires well-determined goals by the management, and learning objectives which are derived from actual job requirements. Professional training on different levels is of utmost importance for SNE's regulatory functions. Senior level management development may utilize programs of a general character, but at the staff level the training should be adjusted to meet specific regulatory and administrative duties or economic problems faced by the department.

5.5

Recommended Training Programs for SNE

SNE training and professional development programs should cover all of the diverse regulatory activities such as

- a) Basic concepts in rate designs for electricity, telecommunication, water, sewer, transportation and others,
- b) energy planning and policy,
- c) energy law, economics, and management,
- d) the impact of energy conservation, standards and codes,
- e) environmental laws and regulations,
- f) renewable energy options available to Costa Rica,
- g) project financing options,
- h) utility management audits,
- i) computer database management,
- j) Local Area Networks for microcomputers, and
- k) microcomputer training programs for graphics, word processing, and spread-sheets

Some of the above seminars and workshops can be arranged through INCAE along with an initial SNE internal management retreat to develop an internal understanding of the SNE as it exists and the direction in which it is headed

NRECA's recommended training program is divided into two phases - basic training courses which are of highest priority for professional development are assigned in Phase I, and all follow-up and advanced courses are identified for Phase II

In Table 5 1, a summary of all recommended training courses is presented

Table 5 1

**Recommended Training Courses, Tools, and Equipment
for the SNE Staff**

| Training Programs, Tools and Equipment | | Objectives | Target Group | Phase I | Phase II |
|---|--|--|---|------------|-------------|
| A On Site Formal Courses | | | | | |
| 1 | Electricity Costs and Tariffs | Course is in three parts Part I deals with costing procedures Part II covers various tariff design theories and policies Part III covers examples from various parts of the world and actual tariff enforcement is discussed | Tariff Department Senior Staff | X | |
| 2 | Marginal Cost Rate Design | The purpose of this course is to take the Tariff Department staff through each step of the marginal cost rate design process and discuss different methods that are available at each step The key steps include (1) Estimating marginal generation costs, energy costs, and capacity costs, (2) estimating marginal transmission costs, (3) estimating marginal distribution costs, and (4) adjusting marginal costs to equal cost of service rates | Tariff Department Senior Staff | X | |
| 3 | Regulatory Aspects of Energy Planning and Policy | This course will prepare participants to address and solve national and institutional energy planning problems in efficient and cost-effective ways | Mid- to senior level managers and energy planners | X | |
| 4 | Utility and Industrial Energy Conservation Programs | This course will help SNE staff identify electric and industrial plants' technical performance and potentials for improving overall plant efficiency Plant energy audits, load shifting, and project planning are discussed | Staff level | | X |

Table 5 1

Recommended Training Courses, Tools, and Equipment
for the SNE Staff

| Training Programs, Tools and Equipment | Objectives | Target Group | Phase I | Phase II |
|--|---|---|------------|-------------|
| 5 Human Resource Development and Training Management | Three phase learning - application - review program with primary emphasis on the development of knowledge and the skills that are critical for regulatory functions | Managers and Personnel Department Staff | X | |
| 6 Evaluation of Private Power Projects | This course will provide guidelines for the engineering, economic, financial, and environmental evaluation of private power projects The course will train participants in the contractual and technical procedures required to develop and implement private power projects | Senior staff and ICE | X | |
| 7 Financing and Integrated Waste (Sewer) Management Facility | This course will provide guidelines for front-end recycling, waste minimization, incineration ash disposal, and various waste recovery programs | Sewer Management Staff | X | |
| 8 Environmental Laws and Regula- tions for Electric Utilities | The course will provide decision-makers within relevant regulatory jurisdictions of the environmental consequences power projects The course will also assist in identifying environmentally sensitive issues | Environmental Regulatory Staff | X | |

Table 5 1

**Recommended Training Courses, Tools, and Equipment
for the SNE Staff**

| Training Programs, Tools and Equipment | | Objectives | Target Group | Phase I | Phase II |
|---|--|--|----------------------------------|--------------------------------|---------------------------|
| 9 | Computers in Management | This course is intended to develop an understanding of the role of microcomputer technology in management information systems. It will show their usefulness in designing systems and supporting the planning and decision-making process. The course will give participants the opportunity to gain hands-on experience and practice in creating programs to meet their individual needs. | Managers | X | |
| B Equipment and Tools | | | | | |
| 10 | Personal Computers | Procure adequate numbers of personal computers (PCs) for the professional and non-professional staff. | All staff | 1 PC for every 5 staff-members | PC for every staff-member |
| 11 | Software | Procure an adequate number of software applications in the following areas: (a) word processing (b) spreadsheet analysis (c) graphics (d) relational database management (e) others | All staff levels | X | |
| 12 | Audio-visual and recording equipment for public hearings | To provide adequate recording and presentations in the regulatory rule-making process. | Board of Directors and SNE staff | X | |

Table 5 1

**Recommended Training Courses, Tools, and Equipment
for the SNE Staff**

| Training Programs, Tools and Equipment | | Objectives | Target Group | Phase I | Phase II |
|---|---|--|---------------------------------------|------------|-------------|
| 13 | Common Data Forms for electric utilities, transportation sector, telecommunications, water resources, and other areas | To establish a regulatory data gathering process with common formats and definitions for staff analysis of rate cases and other issues | All departments | | X |
| 14 | Issues in the regulation of electric, water, and telephone utilities | To identify issues in terms of local environment and regulatory policies | All staff | | X |
| 15 | Regulatory practices for disadvantaged customers | Rationale and methodologies for designing rates for low-income customers | All Tariff Department staff | | X |
| 16 | Internships and Exchange Programs | Identify regulatory institutions in other countries where SNE staff can be exposed to other approaches to regulating public utilities | Junior level staff in all departments | | X |
| 17 | Study tours | Attend workshops and conferences organized in the U S by the National Regulatory Research Institute | Senior level staff and managers | X | X |

Table 5 1

Recommended Training Courses, Tools, and Equipment
for the SNE Staff

| Training Programs, Tools and Equipment | Objectives | Target Group | Phase I | Phase II |
|---|---|------------------|------------|--|
| 18 In-house self help training manuals | Develop audio-visual, multi-media training manuals in the following areas <ul style="list-style-type: none"> • Fundamentals of Utility Finance • Forecasting Methodologies • Regulatory or Legislative Solutions to Open Access in Utility Service Areas • Power Contracts • Technology Choices in Renewable Energy • Cogeneration Projects • Petroleum Management Program • Environmental Training Course • Managing a National Petroleum Enterprise • Geothermal Exploration and Potentials in Costa Rica • Successful Program and Project Management • Relational Database Management Systems • Finance and Accounting for Non-Financial Managers • Supervisory Success Skills | All staff levels | | X X X X X X X X X X X X X X |

To establish a strong training program such as set forth in this section, SNE could start with an internal staff workshop to develop the overall scope and program plan. The purpose of such a meeting would be to

- identify the areas of performance to be improved,
- establish current linkages between the priority areas of need, the management of various department, and the broader institutional and political environment
- describe the manpower and financial constraints involved in performing the broad range of regulatory functions

On the basis of such a workshop, the SNE might designate a small team of senior staff members to address each issue and implement the training and professional development program

60 KEY ISSUES AND RECOMMENDATIONS

61 BACKGROUND

This section presents the identification of NRECA auditors' key issues and several recommendations regarding the organization and management of regulatory functions based upon analyses of the present and pending legislative mandates of SNE. There were four major points of consensus which emerged from the NRECA's audit of SNE:

- a) *There are significant opportunities for improving regulatory functions, efficiency, productivity, and job satisfaction in the management and organization of the regulatory work at SNE,*
- b) *The present regulatory decision-making process is not proactive and transparent to the public,*
- c) *The regulatory process is not truly a planned process although activities may occur on the same cyclical basis,*
- d) *The current job designs, training, and availability of tools and equipment constrain efforts at improvement*

The SNE Employees Union and professional staff have independently prepared a report and recognized that there are significant opportunities for improving efficiency, productivity, and job satisfaction with regard to the management, operations, and organization of SNE. NRECA's audit team concurs with most their recommendations and observations. On a global basis, the audit team agrees that the name SNE is inappropriate and should be changed to reflect the much broader scope of its activities.

6.2 EVALUATIVE CRITERIA

The focus of NRECA's evaluation was on legislative mandates and organizational issues as they relate to the SNE staffs' analytical capabilities. Technical methods and systems were reviewed to the extent that they might impact organizational performance and effectiveness. The dynamic and complex nature of public utility services require the occasional reorganizations of regulatory agencies. More specifically, regulatory organizations typically originate from an initial legislative responsibility and continuously evolve as new laws and regulations are added to protect the environment and customers interests.

In evaluating the SNE organization the following key questions were posed:

- a) *Is the SNE's organizational structure logical and is it conducive to meeting legislatively mandated goals? Are the missions and functions clearly defined and understood?*
- b) *Are interfaces logical and well defined? Are there overlapping or duplicative responsibilities between departments?*
- c) *Are staff levels, both in numbers and expertise, appropriate and do they support the achievement of regulatory goals?*
- d) *What are the major operating improvements in terms of staff training and equipment? Can they be quantified?*
- e) *Are there major increases in the scope of existing functions in the proposed re-organizational legislation? Are there adequately trained professionals to implement these additional regulatory functions?*

The best interests of consumers, government, and employees of SNE will be served only if the proposed organization satisfied the above criteria.

6.2.1 Observations and Broad Perspective

The most immediate problem, recognized by all, is the gross underfinancing of SNE. One analysis shows that more than 97.5

percent of the agency's 1990 budget was for personnel costs, labor-related court judgments for back pay and transfers to the public sector for employee social benefits, only 25 percent was left for office supplies, equipment maintenance and all other operating costs. The 1991 budget provides for c 500 million expenses and c350 million revenues. Another look reveals that the operations regarding water regulations contribute very little revenue compared to their high cost of operation that contributes significantly to the deficit.

This documented circumstance is due primarily to the inadequacy of the assessments levied on the regulated entities. Sources both internal and external to SNE (detailed in the final report) indicate that the assessments, which are calculated by the Comptroller General's office, are inadequate partly because of the lack of SNE's internal capability in cost accounting. They apparently cannot produce the reports and documentation required by the government to justify a commensurate increase in the assessments. The regulated entities are happy enough with a weak regulatory agency, furthermore, they do not pay even the inadequate assessments in a timely manner, we were told.

It is simplistic, but apparently true, to say that the assessments to regulated entities are intended, by law, to support the agency. They don't pay on time, the agency levies interest charges for late payment and they still don't pay. It is implied that, if assessments are increased, they won't pay those either. Obviously, this is a governmental inter-agency problem since the largest regulated companies are state-owned (ICE and RECOPE). If SNE cannot enforce the authorized system, then a higher authority must do so.

It could not be determined exactly how assessments are set, ostensibly to produce revenue to cover the budget SNE could justify. One method would be to set the assessment as a percentage of gross revenues to create a pool of funds from which SNE's justified and approved budget would be funded. Any amount left over could revert to the general fund of the government. Care should be taken to not let that amount become too flexible because it will amount to a hidden tax on consumers. (The proposed reform legislation says that SNE's revenue sources will be "inalienable," so the prospect of the central government's bleeding off revenue has been considered.) Also the percentage of gross revenues has been suggested (15% in one source). This method would index the revenues for regulation to the revenues of the companies, but a set percentage may have to be changed periodically or indexed to the rate of inflation until the economy is more predictable. It is conceivable, too, that the same set percentage for all regulated entities may not be equitable. However, if the basic funding is provided by the larger companies, smaller entities (gasoline

dealers, for example) could be charged a fee for services, that is, pay a flat regulatory fee when they come into the agency

This scenario is intended to support a recommendation that high priority for aid be given to this mundane, but absolutely critical, need for internal infrastructure, namely, a computer and accounting software system designed to produce adequate data to justify the essential increase in assessments. The specific needs can be easily identified in the Comptroller General's office. Three mid-level functionaries reported that it can be done with proper data and by "working the system." Neither the technical nor the managerial capability has been available. Now the managerial capability is in place, the technical support system is still lacking. A plan does exist for revamping SNE's computer capabilities probably in Costa Rica.

It follows that an upgraded computer system will serve many other purposes and functions. However, experience with organizations roughly the same size as SNE and of many diversified functions leads one to admonish careful evaluation of a centralized system (mainframe and work stations) and a decentralized system of personal computers networked to multiple work stations (LAN) within major departments of diverse nature. The team tends toward the latter which implies that the immediate need for an accounting system should come first to produce the revenue. Departmental needs surely are present, but will take a little longer to implement because of the essential training of a larger number of people. Then, too, organizational decisions must be made in order to identify the specific personnel to be trained in certain functions.

An essential by-product of regulation is the audit function. There is an immediate need to properly define the appropriate audit function of regulators. It is NOT to do a routine fiscal audit to determine, as CPAs say, if the accounting records fairly reflect the financial condition of the company. However, that is what is being done by SNE auditors because that is what they know how to do. Most of the regulated companies are governmental agencies (i.e., ICE, RECOPE, municipalities). They have internal audits, external independent audits, Comptroller General audits and SNE audits. All audits do essentially the same thing. However, ONLY the SNE audit can -- or should -- evaluate the appropriateness of certain procedures, allocations of demand costs to consumer classes and other expenditures. Therefore, it is recommended that immediate training be provided to SNE auditors on how to conduct an audit specifically for regulatory purposes -- management practices, compliance with rules and regulations, appropriate and authorized rate implementation, prudence, adequacy of rates to yield targeted rates of return, etc.

It probably will be advisable to contract outside auditors for the large utilities because staffing for this audit function may be impractical. If proper periodic reporting is required of the utilities and enforced, such audits need not be any more frequent than every two years or so, perhaps longer. Rate cases themselves will reveal much of the information mentioned above, of course. The need for management audits (better called compliance audits) is mitigated somewhat if the large utilities continue the practice of filing a rate case every year. The independent audit firm must be contracted by SNE and the cost of the audit paid for to SNE by the utility being audited. Smaller utilities (cooperatives and municipals, for example) could be audited by SNE staff.

The improvement of the audit function as described above can do much to enhance the image of SNE with the regulated entities and, more importantly, it will tell SNE what it needs to know. As audits are done now, there is only a duplication of effort and no comparison of the duplicated efforts by various auditing agencies. A conventional fiscal audit by SNE just is not appropriate or necessary.

One interviewed municipal utility reported that the SNE auditors began the audit of 1989 operations in September, 1990, and finished in February, 1991. By late June, 1991, they had had no report of or communication about the audit from SNE, nor had the general manager of SNE received any report.

A formal rate-filing package to standardize the applications as to information required should be developed. The team has the impression that such a package does not exist. Its contents and requirements could be negotiated to some extent with the regulated utilities. Discussion with the regulated community is advisable because very often regulators do not realize the burden imposed by the request for some data. Then, too, SNE regulators need to become more specialized in what they need to know, therefore what to ask for. Specific test-year guidelines should be established, usually the most recent 12 months preceding the application. From our orientation in public power which often involves purchasing power at wholesale (by cooperatives) for retail sale, it is believed an historic test year is preferable over a future test year (i.e., actual expenses versus projected expenses which tend to get inflated).

While it may be appropriate in the Costa Rican economic circumstance, the team has the impression that all utilities apply for a rate increase every year, some more often when circumstances warrant. Generally, rate increases for electric and telephone utilities should be

good for more than one year, however, there is something to be said for more frequent and smaller increases rather than the "rate shock" of less frequent and larger increases

It may be premature to suggest immediate projects in the area of personnel morale and internal organization, but a discussion with professional employees leads one to venture to observe that some activity in that regard may be advisable. Of course, pay increases would be the first priority when possible through budget

However, the classification of jobs is a great concern for many. We were told that some non-professional employees are holding positions that should be occupied by professional-level people. An examination of the organizational chart and comparison of hierarchical job relationships shows this to be true. Also, some professionals of a higher academic level occupy positions with many more personnel under them and are at a lower organizational level than seemingly lesser positions occupied by lesser-trained people. It is difficult to assess objectively without more in-depth study, but the reason given for the situation is noteworthy. The team was told that the situation exists primarily because of indiscriminate and arbitrary assignment of people to some positions by previous management without regard for qualifications, in other words, people were stuck into slots just to fill the slot. Having heard so much about the state of the organization under previous management, the team is persuaded that the situation merits attention soon. A job reclassification project was approved by management but there was no money to fund it -- about \$4,000 for an outside consultant. It was recommended that consideration be given to such a project in the interest of demonstrating concrete action on behalf of the employees.

In the proposed reform legislation, as well as in present law, there is a provision to prevent conflicts of interest by directors and employees. No one is eligible for employment by the regulatory agency if they have been an employee of a regulated entity in the previous few years, nor can a director or employee of SNE become an employee of a regulated entity for one year after leaving SNE.

While the law should contain a specific conflict of interest prohibition, thought should be given to the fact that SNE will compete with other government agencies for personnel. Unless other agencies have similar post-employment restrictions, young professionals are likely to prefer to work for agencies other than SNE to avoid any such limitation. The main concern for post-employment restrictions is to prohibit the representation of a regulated entity before SNE by a former SNE employee in a matter which was their responsibility when they worked

for SNE That could be prohibited for an indefinite period Such post-employment restriction also should be limited to SNE employees in decision-making capacity and should not apply to clerical or support personnel who did not have responsibility for the regulatory function per se

SNE has had an image problem for some time, although any regulatory body which is credited with raising rates of public services carries a special burden However, it may be of benefit to the government in general and to SNE in particular to increase the visibility of the regulatory function overall and of individual rate cases as they occur That could be accomplished by adding to the proposed legislation (or by rule promulgated by SNE, if permissible) a requirement that each rate case be initially advertised 30-60 days before filing (notice of intent to file) by the utility Then the initial presentation of the rate application, along with its justification, could be presented in a public hearing with provision for pre-approved intervenors to ask questions or request further information The perception and fact of more public input and participation in things that directly affect them will create a degree of public trust in the process This will admit some "bright light" of public decision-making mentioned earlier in this report

Therefore, it is recommended specifically that, to the extent practicable under Costa Rican law and custom, that initial public hearings be required for rate applications, prior notice of intent to file for an increase (how much and what impact it will have on average consumers of all classes) and that all substantive decisions of the SNE Board of Directors which affect rates be made in a "final order" meeting accessible to the public

Organizationally, SNE has problems that are well known, documented and confirmed from inside and outside the agency There is no need to reiterate in detail the necessity for adjustments in the pay scales to equalize compensation with other governmental agencies Presumably that could be a direct result of solving the basic budget funding problem since SNE is mandated to be self-sustaining with no infusion of funding from central government That problem, however, is beyond the scope of this report and any assistance that may be forthcoming as a result of the audit

Also well known and documented is the desperate need for training of existing personnel As mentioned earlier, specific training in how to regulate will be treated by another member of the audit team While

technical skill-training is essential, the team believes that organizational skill-training also is critical and that it would be a significant mistake to omit it from consideration

It is recommended that consideration be given to providing in-house basic supervisory training as part of an initial personnel development program. There is no need to go through conventional training needs assessments, just start from the beginning. Initial concentration should be on the supervisor level, regardless of the level of supervision. If this type of training is in the realm of possibility of potential assistance, a detailed organizational development plan could be formulated.

Some organizational ills are endemic and statutory and are known to management and employees alike. The appropriate organizational structure will require a change in the law. (Principal reference is to the statutory provision for only two departments with the directors named by the Council of Government -- or some central government agency - - and both of whom are members of the Board of Directors. All new hires must be approved by the Board and while it likely is necessary in a government agency that the number of positions be set in budget and approved by the Board, the actual hiring is a management prerogative that should not involve the Board.

There also is some rather burdensome organizational "baggage" that management must deal with which probably is inherent in the Costa Rican system. An assessment should be made by management of the possibility of special government dispensation for reorganizing the agency to accompany the proposed reform. That, however, also is beyond the scope of this report to recommend, we can only make the observation that two high-level department directors' being "on loan" to other government agencies just to get them out of the way, but still on SNE's organizational chart, is a significant burden to management.

A new organizational chart is being recommended by the audit team to more appropriately structure the agency to accomplish its regulatory function. Some administrative changes also should be considered. The Human Resources office is responsible for training, pay administration, performance reviews, personnel records, recruitment, etc. and its higher organizational value should be reflected in comparison with the other support services under the Secretaria Administrativa department (purchasing, transportation, security and building maintenance, and printing).

It is recommended that Secretaria Administrativa be renamed Support Services and that the mail, telephone and receptionist functions be

transferred to it from Secretaria Junta Directiva, the team also recommends that Human Resources be moved to Planificacion (an assessor office) and that the office be renamed Management Resources

6.3 KEY ISSUES

The identification of key issues is based on conclusions by NRECA drawn from discussions with SNE personnel associated with regulatory activities, personal interview with each supervisor/manager, studies obtained from SNE sources, discussions with all regulated entities, and an analysis of the pending legislation which describes in detail SNE's regulatory functions

This section addresses the major issues identified during the study to improve the effectiveness of the SNE. Since all issues appear to have considerable value in the improvement of the operational effectiveness of SNE, the audit team suggests that the SNE and legislature address these issues in the SNE's re-organization. Briefly, the weaknesses of SNE can be classified in the following areas

- *Procedural Issues*
- *Regulatory Functions and Duties*
- *Organizational Structure*
- *Data Reporting and Analytical Studies*
- *Lack of Training Program and Equipment*
- *External Relations (Public and Legislature)*
- *Budgetary Constraints*

Tables 6.1 through 6.3 summarize the team's identification and evaluation of each of the 18 issues in the areas of procedural functions, electricity regulatory functions and duties, and organizational set-up of the SNE. Additional 16 issues for the various other departments and staff training needs are summarized in Table 6.4. Those issues scored "high priority" or "medium priority" constitute the largest subset of issues that the legislature must address when deciding upon the new regulatory procedures and structure of SNE. Tables 3.1 through 3.3 enumerate only low priority issues which must eventually be addressed but which may be postponed for the time being.

In the following section, individual issues presented in Tables 6.1 through 6.3 are discussed, and recommendations are provided for the resolution of issues by the SNE and legislative

TABLE 6.1**Regulatory Procedural Issues**

| Issue Number | Issue Title | High Priority | Medium Priority | Low Priority |
|-------------------------|---|--------------------------|----------------------------|-------------------------|
| 1 | Regulatory Planning Cycle | ● | | |
| 2 | Public hearing process for regulatory issues | ● | | |
| 3 | Periodic review and critique of SNE's policies, programs, and procedures where circumstances are changing | ● | | |
| 4 | Regulatory decisions by the SNE are not binding and final | | ● | |
| 5 | Intervenor Compensation Fund | | ● | |
| 6 | Need for evaluation of demand forecasts and supply plans | | | |

TABLE 6.2**Issues Related To Electricity Sector Regulations**

| Issue Number | Issue Title | High Priority | Medium Priority | Low Priority |
|--------------|--|---------------|-----------------|--------------|
| 7 | Energy Efficiency Program | | ● | |
| 8 | Siting and Licensing of Power Plants | | | ● |
| 9 | Rate Design and Financial Analysis | ● | | — |
| 10 | Environmental Compliance | | | |
| 11 | Development of renewable energy resources and alternative energy technologies in all areas of production and consumption | | ● | |
| 12 | Energy efficiency improvement through standards and codes | | ● | |
| 13 | Private sector participation in power supply | ● | | |
| 14 | Energy shortage contingency planning | | | ● |
| 15 | Budget constraints of SNE | ● | | |

TABLE 6 3**Issues Related To Organizational Structure of SNE**

| Issue Number | Issue Title | High Priority | Medium Priority | Low Priority |
|--------------|---|---------------|-----------------|--------------|
| 16 | Appointment of Board of Directors | ● | | |
| 17 | Public Advisor Office | | | ● |
| 18 | Organizational performance and staffing | ● | | |

6.4 MAJOR ISSUES AND RECOMMENDATIONS

This section consists of discussions of, followed by recommendations for, individual issues identified either as "high priority" or "medium priority" for SNE's regulatory effectiveness. Team recommendations stem from a review of legislation, documents, and meetings held with the SNE staff, managers, and all regulated entities. This section organizes all recommendations into three categories. It focuses primarily on the electricity sector as an example.

- a) *Procedural Issues*
- b) *Regulatory Functions and Duties of Electricity Sector*
- c) *Organizational Structure*

In the following sub-sections, recommendations pertaining to these three topics are discussed individually.

6.5 PROCEDURAL ISSUES

Issue 1: Regulatory Planning Cycle

Background

The planning cycle for organizations like SNE should be based on an understanding of the institutions' mission and developed from a comprehensive list of the regulatory entities' needs. The planning process facilitates the organization's ability to set priorities, deliver services and measure performance. For example, a determination of revenue requirements or rate-increase requests can be planned on an annual basis within the regulatory process. Similarly, the development of energy policies relies on the accurate assessment of Costa Rica's future energy demand and its ability to meet that demand. The SNE can recommend minimum standards for utility forecasts and order utilities to submit, on a biennial basis, forecasted demand and supply plans for SNE's review and approval. These planned cyclical regulatory functions of SNE will enable policy-makers and legislatures

FIGURE 6.1
Recommended
Regulatory Planning Cycle
Annual Tariff Adjustment Process

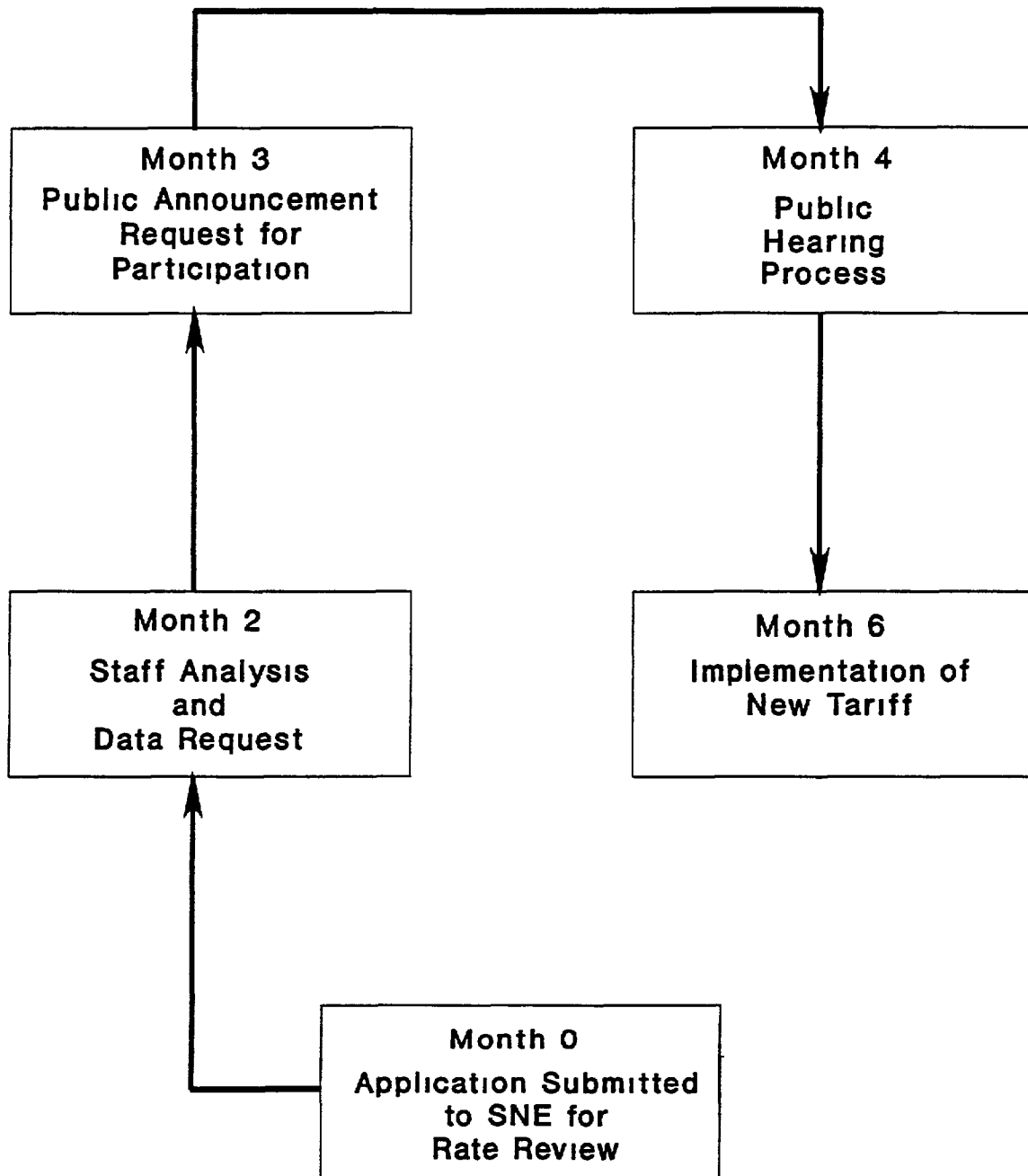


FIGURE 6.2
Recommended
Regulatory Planning Cycle
Biennial Review of Utilities Investment Plan

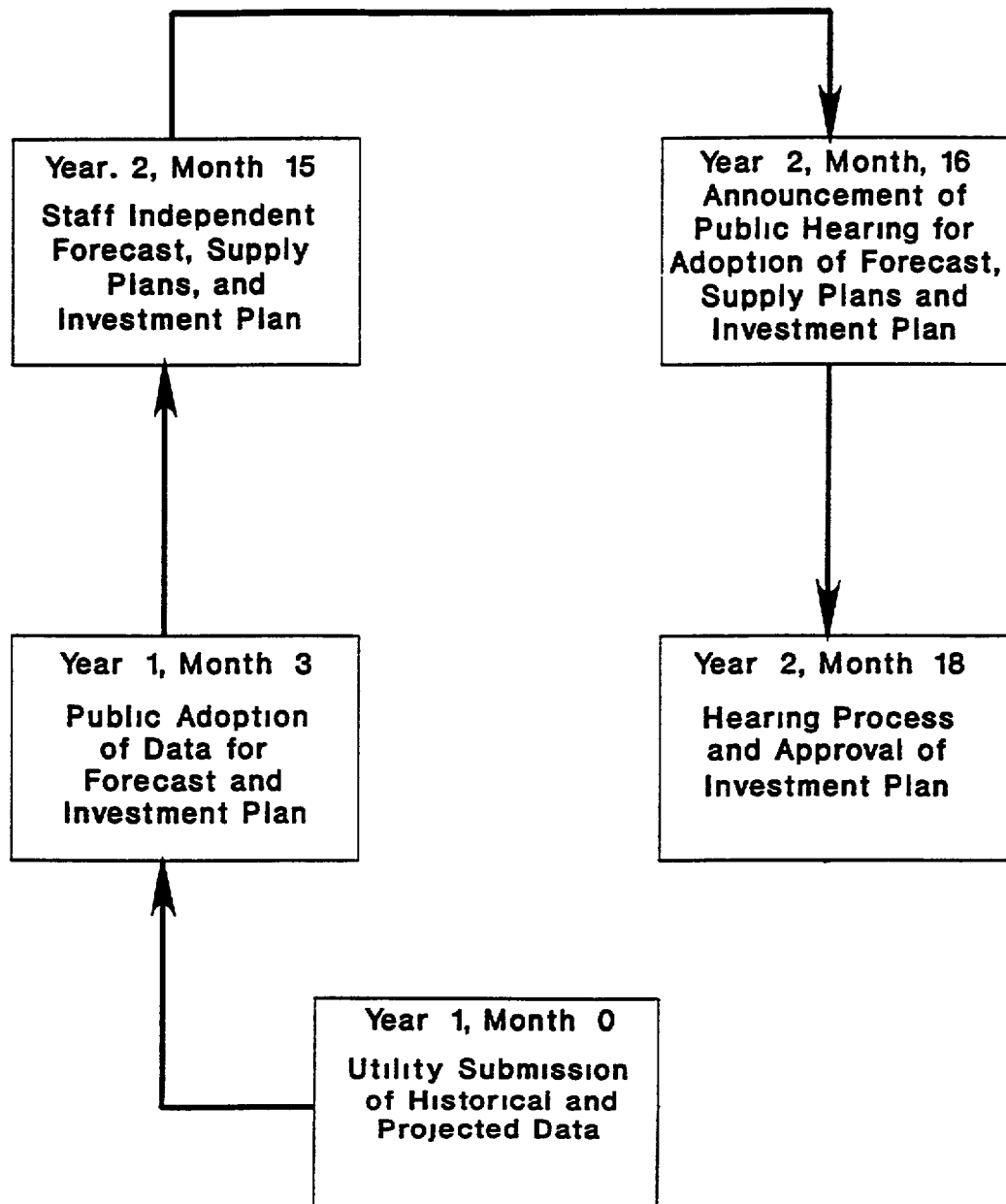
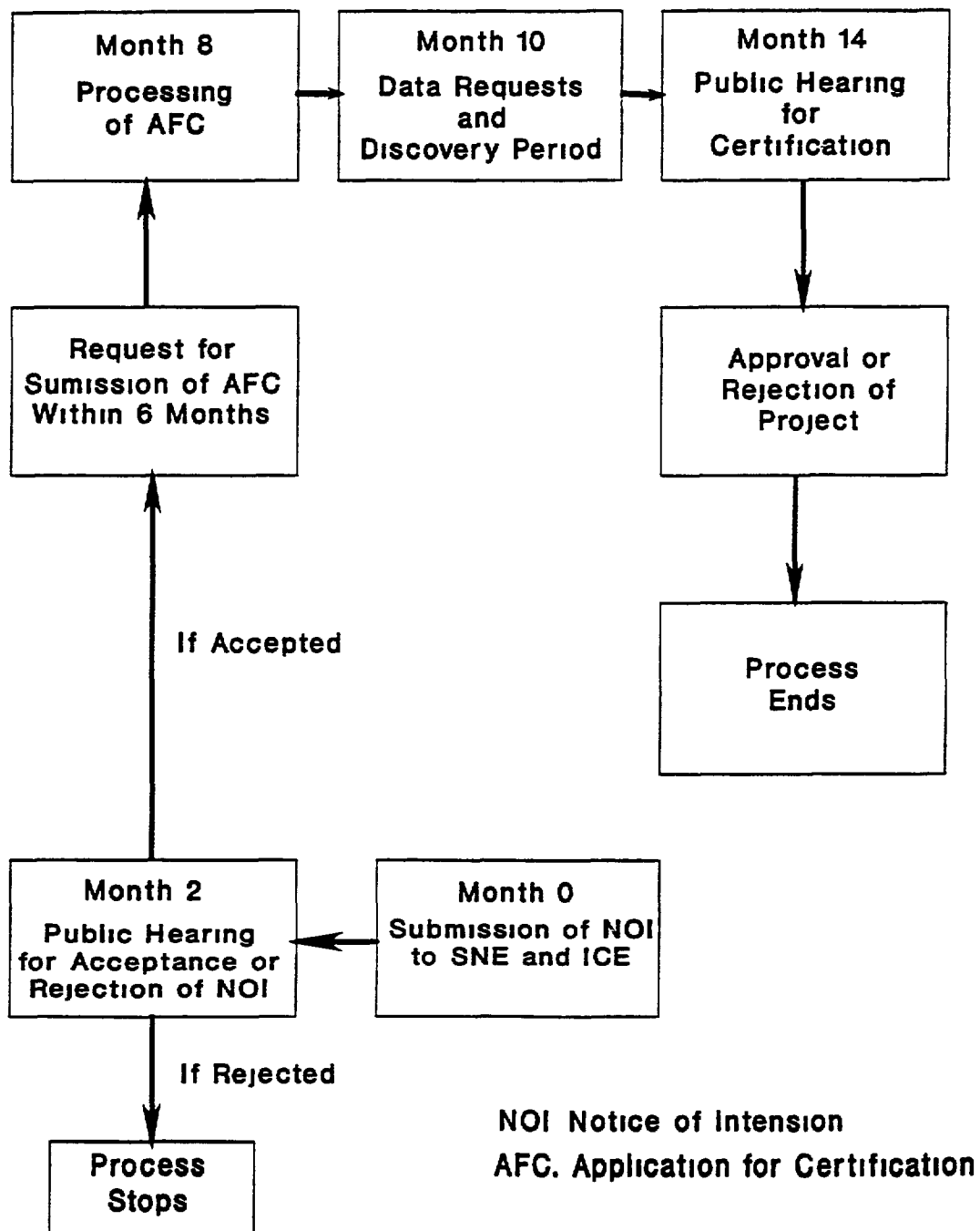


FIGURE 6.3

**Recommended
Regulatory Planning Process
Private Power Project Certification Process**



to understand the consequences of SNE's periodic decisions that may impact the country's economy, finance and public in general

As an example, Figures 3 1, 3 2, and 3 3 illustrate the regulatory planning cycles of three key functions - annual tariff adjustment, the biennial review of utilities investment plans, and the private power project certification process

Recommendation :

The SNE should identify all its cyclical regulatory functions and develop a regulatory processing plan for these functions within the context of its current regulatory duties and legislative mandates Furthermore, for all other functions which are periodic in nature, regulatory processing time limits and service level goals should be established by the SNE

Once service level goals are set in a specific, measurable and time-phased way, they must be publicly announced Ambiguities should be cleared up, responsibilities assigned, and completion dates set

**Issue 2. Public Hearing Process
for Regulatory Issues**

Background

At present, the decision-making process at SNE does not allow public participation or direct input from public All decision should be made in a public hearing process and public participation and representation should be encouraged The emphasis, to date, has been primarily on dealing with the various news media and selected public officials The information needs of the public are not being met by such a program The SNE should cautiously take the following steps over a specified time period to improve public participation in the regulatory process

- *Announce all hearings and meetings in advance for public participation and input,*
- *Place greater emphasis on converting technical terms into a language the public understands,*
- *Provide public speaking and human relation training to all SNE personnel who may appear before the public and news media.*

Recommendation :

Establish a Public Advisor Office to assist people interested in participating in SNE proceedings. In addition, this office should be responsible for alerting the SNE to obstacles to public participation and proposing effective solutions

Issue 3: Periodic Review and Critique of SNE Policies, Programs, and Procedures Where Circumstances are Changing

Background

Within its legislative mandate, there are no clearly defined goals or accountability standards set for the SNE. This fact creates two problems. First, by default, the responsibility for providing regulatory services is bestowed upon SNE without adequate or proper legislation. Second, congressional members and regulatory entities are themselves unsure of what level of jurisdiction or regulatory authority the SNE has since there are no pre-established service objectives.

Periodic review of SNE's regulatory decisions and programs should be incorporated in the legislative process to

- *evaluate SNE's performance in providing regulatory services,*
- *include new programs or modify existing programs due to a change in circumstances, and*
- *to make SNE ultimately responsible to the legislature and the consumers for its performance*

Recommendation

A periodic review of SNE's performance and service level goals should be established by the legislature. Once regulatory functions and service goals are set in a specific, measurable and time-phased way, ambiguities should be eliminated.

**Issue 4 • Regulatory Decisions
by the SNE are not
Binding and Final**

Background

The SNE is responsible for processing formal applications for general rate increases, offset rate increases and attrition rate increases for energy utilities, water utilities, and telecommunications. The staff prepares, for the approval by the Board of Directors, decisions relating to utilities' applications for rate increases. The Board of Directors' final recommendations in the case of electricity are then submitted for the final approval by the Ministers of Energy and the President of the country. Therefore, at present, SNE's regulatory decisions are not binding and there is no appellate process in the regulatory procedures.

The appellate process should be established with the responsibility for reviewing petitions for rehearing of regulatory decisions and, if necessary, defending decisions on appeal to the Supreme Court of the country. All of SNE's regulatory decisions should be binding. However, if an SNE decision is challenged in an application for rehearing, an attorney from the Appellate Section of SNE will independently review the case to determine whether there has been a legal error which would necessitate a rehearing. If the SNE denies rehearing, the aggrieved party should then have the legal right to file a petition in the Supreme Court for a writ of review or mandamus.

Recommendation :

The Congress should declare that all decisions which are adopted in a public hearing process by the SNE Board of Directors are binding

An Appellate Section in SNE should be established for reviewing petitions for rehearing of SNE decisions and defending SNE decisions on appeal to the Supreme Court.

**Issue 5 • Intervenor
Compensation Fund**

Background

At present, SNE has a process to represent consumers who have routine problems with utility companies under the SNE's jurisdiction. For major litigation, some consumers may not have the financial

resources to file a legal complaint against the regulated entities. Additionally, if the complaint stems from the SNE's decisions, an intervenor compensation fund should be available to provide legal fees and other expenses for the consumers to settle the disputed issues either legally in a court of law or informally in a public hearing process in SNE.

Recommendation :

Establish an Intervenor Compensation Fund or free legal services for financially burdened consumers

6 6 REGULATORY FUNCTIONS AND DUTIES ELECTRICITY

Issue 6: Need for the Evaluation of Demand Forecasts and Supply Plans

Background

At present, SNE does not have the explicit responsibility for energy planning and policy-making to ensure a reliable and economic energy supply. Every electrical utility in the country should submit to the SNE every 2-3 years a report specifying 5, 10 and 20 year forecasts on assessments of demand and resources for its service area. Such reports should include estimated peak loads, resources, and reserve margins for the forecasted period, existing and needed electrical generating plants and facilities, an estimation of the availability and cost of fuel resources for the forecasted period, an estimation of local and foreign financing requirements, and a description of projected growth influencing increased demand for electrical energy and the basis for such projections.

The forecasts and supply plans will be reviewed and evaluated by the SNE staff according to population growth estimates, land use, transportation, economic development programs, the environment, the public health, and the country's macro-economic impacts of power projects.

In a public hearing process, SNE should recommend and adopt the official forecasts and supply plans for the utilities

Recommendations :

The SNE should have the responsibility for the evaluation and adoption of official electricity forecasts and supply plans for the electric utilities.

**Issue 7 Energy Efficiency
Program**

Background

Various organizations and agencies in Costa Rica have collectively engaged in energy conservation, end-use efficiency improvements, and load management activities. A large number of DSM programs have been identified, and substantial amounts of cost-effective energy savings can be realized in the short-term (within 5 years) and long-term (within 10 years). However, SNE does not have any staff, policies, or programs that are designed to eliminate energy waste, improve energy efficiency, reduce the level and rate of energy growth, manage electrical load patterns, and assist other government agencies involved in transportation, construction, and land-use planning.

Recommendation :

The SNE should assess new energy conservation program opportunities, develop new strategies and projects to implement conservation programs, and monitor and evaluate project results.

**Issue 8 Siting and Licensing
of Power Plants**

Background

A significant responsibility of SNE is to centralize the review and permitting requirements for new power facilities, including transmission lines. The applicant, either utility or a private power producer, bears the burden of proof in the regulatory proceedings and should be entitled to a decision within a predetermined (e.g. one year) time period. The SNE should also retain on-going jurisdiction over

operating plants and appurtenant facilities to ensure that permit requirements are met

To ensure that needed energy facilities are authorized expeditiously, safely, and in an environmentally acceptable manner, the SNE should evaluate and decide on power plant siting applications, monitor power plants to verify that they are constructed and operated in accordance with conditions of the certification, assist local governments in resolving major issues which may impede energy facility siting or result in adverse environmental impacts, and assess the environmental, public health and system reliability implications of energy resource plans and policies

Recommendation :

The SNE should have the exclusive authority to certify all power facilities (power plants and transmission lines) in Costa Rica.

**Issue 9• Rate Design and
Financial Analyses**

Background

The pricing of a monopolist utility provides many problems. The SNE has several choices, but only two are of interest. The SNE can seek to set prices equal to marginal cost, or set prices equal to the costs of service. Historically the second method has been used. Since by definition the costs of service involved are the utility's average accounting costs, the result is that total costs will equal total revenues.

Economics teaches us that if we have a number of givens, including perfect competition, perfect information, freedom of exit and entry, etc, prices will be set at marginal costs. This may not yet exist in Costa Rica, but it is an attainable goal.

The SNE staff must have the capability to actively analyze and recommend the improved and more efficient financial performance of regulated utilities in the following areas:

- *Rate design, revenue allocations to customer classes, and marginal costs of fuels and electricity,*
- *Revenue requirements for utility operations,*

- *Cost of capital and rate of return,*
- *Financial aids,*
- *Resource planning and capital budgets,*
- *Electric utility fuel and purchased power costs,*
- *The reasonableness of costs and the rate-making treatment for major additions to the rate-base such as large power plants,*
- *Prices and contract terms for small power producers and cogenerators,*
- *Special studies on long-term financial efficiency, productivity, and cost controls, and*
- *Investigations of subsidiaries and affiliated interests*

Recommendation•

Provide appropriate training programs for the SNE staff in the areas of utility rate design and financial analyses

Issue 10 Environmental Regulations And Compliance Monitoring

Background

An Article of the pending reorganization legislation for the SNE states that, "the SNE will propose at the beginning of each administration an environmental policy for public services which provides for savings, conservation, and rational utilization of natural resources depending on the environmental impact which any project defined in this law can generate, the SNE can impose extra changes in the prices, tariffs or contributions for the development of such service "

At present SNE does not have any qualified staff capability to evaluate environmental regulations and standards which affect the design, construction, and operation of all electrical power facilities, nor does SNE have the capability for inspection and enforcement procedures or monitoring systems which will ensure environmental compliance with standards and regulations adopted by the government

Recommendation :

Establish an Environmental and Licensing Division within SNE organizational structure.

Issue 11: Development of Renewable Energy Resources and Alternative Energy Technologies in All Areas of Production and Consumption.

Background

There is a growing international focus on the global environment. Renewable energy and alternative technologies are growing in importance, and are most effectively applied when the regulatory body sets the rules. The SNE should take the leadership role in the development of renewable and alternative energy technologies and fuels. The SNE should create an economic and regulatory climate that encourages private industry to join in partnerships with public industries to develop alternative technologies to use renewable energy sources such as solar, wind, biomass and geothermal.

Recommendation*

Establish an Alternative Energy and Technology Development Program at SNE. The goal of SNE should be to make available and promote the use of new energy systems which offer the most positive economic and environmental impacts. Alternative systems utilizing wind, geothermal, fuels from biomass, and solar energy systems should be the prime areas of efforts.

Issue 12 Energy Efficiency Improvement Through Standards and Codes

Background

It has been argued that the first step of an end-use energy conservation program is the adoption of appliance efficiency standards and building energy codes. Standards and codes have a variety of benefits. Because standards and codes can guarantee that energy consumption will be

reduced, utilities in Costa Rica can build fewer expensive and environmentally degrading energy production facilities. The SNE should identify energy efficiency issues in each energy sector (i.e., residential, commercial, industrial, transportation, and utility) and prepare a strategic plan to improve institutional capabilities to increase end-use efficiency via standards and codes. This regulation effort may require technical assistance to establish institutional monitoring and enforcement mechanisms for appliance standards and building codes.

Recommendation :

- *Prepare an action plan for developing institutional capabilities for adoption and enforcement of building and appliance standard and codes,*
 - *Prepare legislation and regulations related to the adoption, monitoring and enforcement of standards and codes in Costa Rica.*
-

**Issue 13 Private Sector
Participation in
Power Supply**

Background

Until recently, Costa Rica appeared to be able to meet the projected demand in both the short and medium terms. However, investment in the power sector is now increasingly constrained by the realities of public sector finance. The national energy plan specifically states that privately-financed power generation initiatives will be considered. The government of Costa Rica has also passed an amendment to the existing power law that allows private power projects of less than or equal to 20 MW to sell power to ICE.

The financing of private power facilities can involve several entities or participants: sponsors, utilities, banks, insurance companies, leasing companies, private investors, vendors, construction firms, and government entities. The SNE should develop the staff capability to evaluate private power projects to: a) identify issues bearing upon the most promising forms of private sector involvement, b) identify major criteria for successful private participation, together with existing problems, and c) explore the relative attractiveness of different types of investment to private investors.

Recommendation :

Develop staff capabilities to monitor and to evaluate the technical, economic, and financial implications of private power projects connected to the national grid and in isolated areas

**Issue 14. Energy Contingency
Planning**

Background

Presently, SNE does not develop any plans to deal with possible shortages of electrical energy or fuel supplies. Electric utilities, oil refineries, and fuel wholesalers or manufacturers should submit to the SNE energy load curtailment plans or emergency energy supply distribution plans for the purpose of identifying priority loads or users in case a sudden interruption or shortage of electrical generation or petroleum fuel supply occurs. If a serious energy shortage is likely to occur, the SNE shall make recommendations to the legislature to initiate specific governmental action.

Recommendation .

On a periodic basis (e.g., every three years) SNE should prepare an Energy Shortage Contingency Plan and submit to the legislature a plan to deal with emergency conditions in energy supply in Costa Rica due to man-made or natural calamities

**Issue 15: Budget Constraints
of SNE**

Background

The SNE should explore additional revenue sources and evaluate the likelihood of their implementation. As a starting point, the additional revenue might be generated to relieve budgetary constraints from the following regulatory functions:

- *Performing emission tests and providing vehicle smog certificates,*
- *Providing environmental compliance certificates,*

- *Providing Certificates of Public Convenience and Necessity (CPCN) for all construction projects,*
- *Publication of energy and environmental related databases,*
- *Other Publications, and*
- *Public Safety Inspections*

Recommendation .

*Develop additional revenue generating regulatory functions for the SNE
It may also be possible to consider the World Bank or IMF for accessing adjustment funds that would be dedicated on a one-time basis toward improving the financial integrity of SNE (eradicating built up debt)
SNE's plight should be treated as a national level problem, and not just as a local institutional one. It would also be helpful to give SNE legislated muscle to enforce payment for services rendered to regulated entities, with specific penalties for late or withheld payments*

67 ORGANIZATIONAL STRUCTURE OF SNE

Issue 16. Appointment of Board of Directors

Background

The SNE is made up of a five member Board of Directors who are directly appointed by the President of the country. The present process of appointing a Board of Directors does not guarantee sufficient continuity of the representation of the fields of energy engineering, physical science, environmental protection, law, or the public at large with changes in national government administration. Five board members should be appointed from five distinct fields to represent all regulated entities. One of the five directors may be either elected by his fellow Directors or appointed by the President as a Chairman of the SNE to preside at decision-making public hearings and other formal sessions.

Recommendation:

The Board of Directors should represent all fields relevant to regulatory entities and the public at large. Review the appointment procedures of Board of Directors and their required background qualifications.

**Issue 17• Public Advisor
Office****Background**

The Public Advisor's Office, under the direction of the Directors will ensure that full and adequate participation of the public is secured in all of the programs and proceedings of the SNE. Measures for such participation include ensuring that timely and complete notice is disseminated to all interested groups and to the public at large, advising such groups and the public as to effective ways of participating in the SNE's proceedings, recommending to the SNE additional measures to assure open consideration and public participation in energy planning, site and facility certification, energy conservation, and emergency allocation, and all other regulatory proceedings.

Recommendation•

Create a Public Advisor Office in the organizational structure of SNE

**Issue 18 Organizational Performance
and Staffing Requirements****Background**

Currently, the Board of Directors and staff express their regulatory service needs in all areas of energy, transportation, fuels, hydro-resources, building wiring services, facility licensing, rate-making and other areas of public service. There are no clearly defined goals set for the present organizational structure of SNE. Furthermore, because the SNE has not defined a formal set of regulatory objectives against which to measure organizational performance, or establish a system for performance measurement, it is not always able to perform periodic functions, e g , evaluation of tariff requests, as effectively as SNE would like. The lack of stream-lined functional duties of staff has had two effects on the overall performance of SNE. First, there is no well-

organized basis for measuring and controlling staff performance. Second, the attainment of high-quality responsive and comprehensive service level goals becomes increasingly dependent on an individual sense of responsibility and personal obligation, and not on organizational directive.

The SNE should determine whether the organization needs more professional staff, or a different staff mix, to meet its legislative mandates. Based on regulatory functional needs in the areas of rationalizing tariff pricing policies, macro-economic impact evaluation of projects, environmental regulatory needs and other functions, and subject to the budget, the SNE might consider hiring additional professional staff.

Recommendation

- *Stream-line and re-organize SNE to improve its regulatory performance service, and*
 - *Consider hiring of additional professional staff in the areas of environmental regulation and macro-economic analyses of project financing schemes*
-

6.8 SUMMARY OF OTHER ISSUES AND STRATEGIC RECOMMENDATIONS

Table 6.4 lists 18 additional issues in the areas of (a) *Utility Database Management - Estadística*, (b) *Training Programs, Tools, and Equipment Needs*, (c) *the External Relations of SNE*, and (d) *Regulatory Functions for Telecommunications - Control Telefonico*, and provides strategic recommendations for implementation.

The relative priorities of the strategic recommendations are based on the perceived needs of SNE and the regulated entities. To provide a basis for selecting the appropriate level of priority, the following criteria were used to evaluate each recommendation:

Quantitative Benefits

- Improved performance levels,
- Potential rate-payer benefits, and
- Potential cost avoidance

Qualitative Benefits

- Meets challenges of changing environment,
- Contributes to effective management, and
- Improves regulatory services

For each quantitative and qualitative benefit, a **High, Medium, or Low** classification was assigned to each recommendation. All of the recommendations are likely to produce indirect benefits to which specific dollar values cannot easily be attached, but which will result in more efficient and effective operations of SNE.

Three levels of priority were assigned

- A -** Essential that action on the recommendation be implemented immediately
- B -** Recommendation will materially contribute to performance, and specific action should be taken within six months
- C -** Recommendation will materially contribute to long-term performance, and specific action should be taken within one year

Table 6 4

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|--|--|--|--------------|-------------|----------|
| A. Estadística | | | | | |
| 1 Common data format for reporting utility forecast and supply plans | The purpose of these forms and data submission is to document the utilities' supply plan that they see as most plausible for the planning period. All utilities will submit data on a periodic basis (e.g., every two years) which should be consistent with the resource plan they view as most likely to occur. In Annex D, a sample data form for electric utilities has been provided. | <ul style="list-style-type: none"> Develop regulation for utilities to submit demand forecasts and supply plans on a biennial basis to SNE Develop common data forms for all regulated entities <ul style="list-style-type: none"> - electric utility - telecommunications - transportation - fuels | High | High | A |
| 2 Historical Performance Data - Operational - Financial | <p>SNE has the responsibility for monitoring both the operational and financial performance of regulated utilities.</p> <p>Quarterly performance data submission will allow SNE to monitor normal and unusual trends in the operational and financial performance of utilities.</p> | <ul style="list-style-type: none"> Develop regulations for performance data submissions Develop formats for performance data in the technical and financial areas | Medium | Medium | B |
| | | | Medium | Medium | B |

Table 6 4

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|---------------------------|---|--|--------------|-------------|----------|
| 3 Fuel Use Database | At present, SNE does not maintain a comprehensive fuel use data database for electricity, industry, transportation, and other users. This database will enable SNE staff to perform independent fuel use forecasts by different end-use sectors and also to identify potential fuel substitution and energy conservation opportunities. | <ul style="list-style-type: none"> Implement a fuel use database for all sectors | High | High | A |
| 4 Transportation Database | SNE is responsible for regulating the transportation industry to ensure public rates and services that are just and responsible, and to enforce established rates, rules, regulations, and statutory requirements. | <ul style="list-style-type: none"> Maintain a transportation database for privates automobiles, public buses, trucks, and others | Medium | Medium | B |
| 5 Environmental Database | Article 9 of the pending legislation requires SNE to monitor and enforce various environmental regulations. | <ul style="list-style-type: none"> Develop and maintain an environmental database for all major pollutants from electric utilities and industries | High | High | A |

Table 6 4

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|--|---|--|--------------|-------------|----------|
| <p>6 Periodic publications of performance and status reports for electricity, telecommunications, water resources, transportation, and environmental conditions in Costa Rica</p> | <p>The SNE should be a principal energy planning and policy-making institution. The SNE is responsible for protecting the environment and the public health, safety and general welfare as they are impacted by the operations of public utilities. Based on the findings of these technical reports, SNE will be able to recommend legislative, administrative, and regulatory actions to resolve energy issues and ensure a reliable future supply of energy for Costa Rica's citizens.</p> | <ul style="list-style-type: none"> ● Publish biennial utility status reports on <ul style="list-style-type: none"> - electricity - telecommunications - transportation - environment - others | High | High | A |

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|-------------|--|---|---|--|---|---|
| B | Training Programs, Tools, and Equipment * | | | | | |
| | 1 Training programs for the professional staff | <p>At present, the SNE does not have any formal training program for the development of its staff. The SNE Training Program should include courses for the professional staff which will be offered periodically in Costa Rica, and one-of-a-kind training programs designed for specific regulatory functions. All SNE training programs should be hands-on, practical, intensive, and job-related.</p> <p>Training is regarded by most staff as a means to advance within their department. In addition to its personal value, sound staff training is very important to proper unit management and performance of regulatory functions.</p> <p>SNE should develop a budget for systematic training programs such as supervised on-the-job training, formal courses, workshops, study tours, and internships.</p> | <ul style="list-style-type: none"> Set aside funds for continuing training programs Professional Staff Develop training programs in the following areas: <ul style="list-style-type: none"> (a) Seminar on regulation of public utilities (electric, gas, and telecommunications), (b) Rate design, revenue allocations to customer classes, (c) Electric utility engineering, (d) Seminar on accounting and financial management, (e) Project economic appraisal, (f) Energy planning and policy, (g) Environmental regulations and project impact analyses, (h) Private power projects evaluation, (i) Telecommunication utility regulation, (j) Utility management audits and procedures, | <p>High</p> <p>High</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> | <p>High</p> <p>High</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> | <p>A</p> <p>A</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> |

Table 6 4

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|---|-----------|--|--|--|-------------------------------------|
| 1 Training programs for the professional staff (Cont) | See Above | (k) Water regulation and rate design, (l) Telephone market structure analyses, (m) Utility regulation and privatization | High " " | High " " | A " " |
| 2 Training programs for non professional staff | See Above | <ul style="list-style-type: none"> ● <i>Non-professional Staff</i> Develop training programs in the following areas (a) Effective utilization of micro-computers, (b) Relational database management, (c) Successful program and project management, (d) Basic computer training for word processing, spreadsheets, and graphics, (e) Finance and accounting for non-financial staff, (f) Supervisory success skills, (g) Statistical analyses and data management | High " " " Medium Low High | High " " " Medium Low High | A A A A B C A |

Table 6 4

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|--|--|--|--------------|-------------|----------|
| 3 Computer hardware, software, and other tools | The SNE staff, at present, does not have adequate computer hardware and software to perform regulatory audits and database management. All professional staff should be equipped with personal computers (PCs). Additionally, SNE needs basic audio-visual equipment for regulatory presentations and public hearings. | <ul style="list-style-type: none"> Procure appropriate number of PCs and software for the professional and non-professional staff | High | High | A |
| | | <ul style="list-style-type: none"> Procure appropriate audio-visual equipment for regulatory hearings and public presentations | High | High | A |

Table 6 4

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|---|--|--|--------------|-------------|----------|
| C External Relations 1 Public Relations Programs | SNE's external relations generally take place on two levels (1) at the decision-making level through the active involvement of the Board of Directors in the legislative process, and (2) at the staff level between SNE staff and the general public. SNE currently does not lobby adequately by providing information and new perspectives on issues impacting both consumers and utilities in regulatory process. | <ul style="list-style-type: none"> Define the SNE's public relations program - Make press releases more effective in announcing news-worthy items | Medium | Medium | B |
| 2 Legislative Relations | Directors should accomplish the high-level lobbying for the SNE on an individual basis. In general, lobbying has two principal components (1) economic tools for access to legislators, and (2) knowledge of the timing of legislative activities and related issues that affect SNE. | <ul style="list-style-type: none"> Develop coordinated individual efforts with other Boards of Directors in a strategic lobbying plan Develop a system for answering repetitive regulatory questions from legislators and the public | High | High | A |
| | | | High | High | A |

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|--|--|--|--------------|-------------|----------|
| D Telecommunication 1 Universal telephone service for all citizens | To maintain universal telephone service for all citizens, it is essential to keep basic telephone rates at affordable levels. It is also important that drastic rate increases not occur suddenly, adversely and unexpectedly affecting rate-payers. Because of the importance of universal telephone service, the SNE should be required to undertake an annual survey to determine the percentage of residences that have telephones and the trends. | <ul style="list-style-type: none"> The SNE should be directed to perform an annual survey of telephone service. If the percentage of residential service falls significantly, the SNE should report this to the Congress with specific recommendations to arrest the decline and increase the affordability of telephone service in Costa Rica. | High | High | A |
| 2 Rate design alternatives in telephone | New technology for cost and time monitoring now allows regulatory agencies to evaluate various rate design alternatives considering an interactive cost allocation system, local measured service, and access charges paid by the cost causer. The SNE must evaluate the impact of various rate design alternatives for the rate-payer's benefit. | <ul style="list-style-type: none"> Evaluate rate design alternatives taking into consideration the monitoring technology and socio-economic issues of different consumer classes. | High | High | A |

Table 6 4

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|--|--|--|--------------|-------------|----------|
| 3 Retroactive rate making | Retroactive analyses of utilities' O&M and capital expenses allow regulatory agencies to critically review utilities' expenditures, making sure the utilities provide clear and adequate justifications for past year's expenditures and operating performance | <ul style="list-style-type: none"> Implement "Reasonableness of Operation" proceeding | High | High | A |
| 4 Technology evaluation and quality assurance | A variety of efforts are needed to address the issues of service quality assurance and continuing growth in general phone systems and coin-operated pay phones. Some of the strategies to address these problems include market uses of improved technologies and better O&M practices | <ul style="list-style-type: none"> The SNE should review and publish biennially, a Customer Quality of Service and Technology Status Report for the telecommunication utilities | High | High | A |

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|--------------------------|---|---|--------------|-------------|----------|
| 5 Inter-exchange Service | <p>The SNE should develop and encourage competition in the inter-exchange market and ultimate deregulation when substantial competition evolves. While the desire to cultivate competition, where viable, is shared by many, it is not at all certain that a fully competitive structure will ever evolve in Costa Rica under the present regulatory conditions.</p> <p>For competition to be workable in exchange markets, the inter-exchange technology must be such that economies of scale flatten out at some point to allow more than one carrier to operate profitably. If economies of scale increase with usage (i.e., with costs per call continually decline as more calls are made), one dominant carrier can operate at lower cost and eventually drive out all competitors.</p> | <ul style="list-style-type: none"> The SNE should investigate the present condition of the monopoly of inter-exchange service in Costa Rica by the ICE to determine whether inter-exchange service should be a natural monopoly under the current or foreseeable technology. | High | High | A |

**Summary of Other Issues
And Strategic Recommendations**

| Issue Title | Rationale | Recommendation | Quantitative | Qualitative | Priority |
|--------------------------|---|---|--------------|-------------|----------|
| 6 Intra-exchange Service | Intra-exchange service is a natural monopoly, it is believed that ICE can more efficiently provide the service than several entities In light of this, SNE should investigate the customer's benefit from competition in the intra-exchange market However, competition, when introduced in a market that is a natural monopoly, can lead to waste and can complicate rate-making substantially | <ul style="list-style-type: none"> The SNE should investigate customers' costs/benefits of competition in intra-exchange service | Medium | Medium | B |

* Assuming new funds can be obtained for this activity

ANNEX A

SNE AUDIT SURVEY FORM

CUESTIONARIO DE AUDITORIA DEL SNE
Junio, 1991

PROGRAMA DE EVALUATION DEL SNE
A EFECTURA POR
NRECA International, Ltd.

| DEPTO. | Departamento / Oficina |
|---------------|-------------------------------|
| Oficina | |
| Seccion | |
| Unidad | |

Describe Funciones Generales de la Oficina.

Funciones Específicas de la Oficina:

- a)
- b)
- c)
- d)
- e)
- f)
- g)

1. Número Total de Empleados de la Oficina.

Cantidad de Profesionales

Cantidad de No-Profesionales

2 Nivel Profesional de los Empleados

a) Años con la Oficina

Menos años Promedio Más antiguo

b) Nivel educacional

Grado PhD Grado Master Bachiller

Otros

c) Niveles Salariales (Colones por Años)

Más Bajo Promedio

Más Alto

d) Programas de Entrenamiento y Desarrollo

(Sí) No

3. Empleados no-profesionales

a) Número Total de Empleados

b) Anote las Funciones Generales

c) Nivel Educativo General

d) Número de años con el SNE

Menos años Promedio Más antiguo

e) Nivel Salarial (Colones por Año)

Menor Promedio

Mayor

4 Paquetes computación y Equipos de computación para hacer su Trabajo

a) Paquetes de computacion

b) Equipos de computación

5. Cuáles son las dos prioridades que le ayudarían a cumplir sus funciones más eficientemente?

a)

b)

c)

d)

ANNEX B

TERMS OF REFERENCE

TERMS OF REFERENCE

AUDIT OF THE SERVICIO NACIONAL DE ELECTRICIDAD

The audit team will consist of three consultants.

Robert Chronowski-Audit Coordinator
James Morriss-Institutional Auditor
Shibu Dhar-Technical Auditor

The audit team will spend two weeks in Costa Rica arriving in San Jose June 15, 1991 and departing June 29, 1991. They will work closely with Leonel Fonseca, Executive Director of SNE, and will interview as many of the SNE staff members as necessary to form the audit conclusions. The audit team in conjunction with Leonel Fonseca will prepare an audit schedule will assign specific individual and team tasks. The Audit Coordinator will be responsible for monitoring the progress of all the team and team member activities.

Each team member will prepare an individual component paper that will be integrated to a final report by the Audit Coordinator or person designated by Paul Clark, Assistant Administrator IPD. The team will meet with the Instituto Costarricense de Electricidad (ICE), Direccion Sectoral de Energia (DSE), the Ministry of Energy, and key legislators to obtain a comprehensive picture of SNE within the Costa Rica energy sector and the national perspective.

Each auditor report will be structured so that from it an integral personnel development plan, a software/hardware acquisition plan, and a new legislative mandate plan may evolve. If needed, a training plan, a finance plan, and an overall definition of SNE will be generated. The audit results should provide the Government of Costa Rica, SNE, NRECA, or other organizations with the appropriate materials to proceed with a systematic reconstruction of SNE as an up-to-date, regulatory entity capable of dealing with the complexities of private power in Costa Rica.

A draft of the individual reports will be due in NRECA Washington one working week after departure from Costa Rica. Drafts of the individual reports will be submitted to Paul Clark and Leonel Fonseca for review or comment. The integration into a single final report will be done after comments have been received from the two reviewers.

The auditors shall

- 1 Identify the staff and technical capabilities of SNE as they relate to regulating utility services in Costa Rica, such items including, but not limited to

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The auditors shall

- 1 Identify the staff and technical capabilities of SNE as they relate to regulating utility services in Costa Rica, such items including, but not limited to

- a regulatory responsibilities,
- b power plants and transmission line evaluation,
- c siting procedures,
- d fuel procurement policies and contracts,
- e pricing of electricity and water,
- f water allocation policies for irrigation, municipal use, and hydro-electricity generation,
- g telecommunication rules and rate-making,
- h tariff evaluation procedures,
- i energy conservation and demand management,
- j private power project evaluation,
- k environmental impact assessment,
- l energy demand forecasting capabilities
- m energy contingency planning capabilities,
- n power projects financial impact evaluation capability,
- o implementation of standards and codes for energy efficiency,
- p computer software and hardware capabilities,
- q training needs

2 Review SNE's regulatory responsibilities in all areas (electric utilities, telecommunications, water resources management, fuel procurement and pricing, and transportation) including rates, service, and safety Identify SNE's effectiveness in setting rates, regulating services, and monitoring operational safety and quality Evaluate how, in carrying out its mission, SNE solicits comments and other input from all parties affected by its actions, particularly from customers of regulated utilities

3 Review SNE's technical capabilities in order to identify SNE's present effectiveness for an independent evaluation of electric utilities demand forecasting and investment planning process The auditor shall review the following technical areas, but not be limited to them

- a) Demand forecasting The review of SNE staff capability in demand forecasting should consider the extent to which the models and databases presently used could enhance the ability of ICE to forecast/track trends in demand
- b) Investment planning The review of SNE's capability in investment planning should consider the extent to which existing regulatory arrangements require SNE staff to evaluate ICE's expansion program and the need for efficiently dealing with the growing volume and complexity of power projects--both public and private power--it is required to appraise The review should suggest any adjustment to present organizational and technical staffing, and training that could improve SNE's regulatory structure
- c) Fuel Supply Arrangements The principal objective is to identify the staff's capability in evaluating present fuel supply arrangements and contracts If necessary, the review should make recommendations on how SNE's staff

should evaluate fuel supply options for incremental generation by existing or proposed power station projects

d) **Environmental Objectives and Capabilities** The audit should identify the government's objectives related to power development and associated fuel industries and comment on the SNE's present capability in evaluating these issues for power development projects

e) **Assessment of Revenue Requirements** The objective is to review staff capability to analyze ICE's and/or private producer's revenue requirements with respect to

- earning sufficient revenue for the utility to meet its financial objectives,
- compensation for distortions in the pricing of electricity substitutes,
- setting income distribution objectives,
- ensuring practicality and reasonable cost of administering the new tariffs,
- computation of the marginal economic costs of generation, transmission and distribution at different consumer categories over the time-frame specified

f) **Regulatory Proceedings and Decision-Making Process** The objective of this sub-task is to review all procedures SNE has set up in the following areas

- how projects are proposed and what type regulatory proceeding are required,
- what type of information and advice is given to members of the public who may want to participate in a formal hearing,
- the establishment of a Public Advisor's Office in SNE that responds to specific public questions or provides needed information,
- service to the public, consumers, and regulated utilities

g) **Organization, Management and Training** Review relevant duties and responsibilities of all technical and non-technical staff, departments, and units related to the power sector, telecommunication, and water allocations
Determine the needs for

- staff training, computer software and hardware needs, and provide priorities,
- define the specific characteristics of the training, identify staff to be involved, duration of the courses, etc training, identify staff to be involved, duration of the courses, etc
- estimate funds to be allocated in the budget for the purchase of computer hardware and software and training program
- determine the operating inefficiencies and inter-organizational bottlenecks if any exist under the present organization Identify any essential functions that are not covered by the organization

- design an organizational structure which will fulfill all regulatory responsibilities while eliminating or mitigating the inefficiencies and relationship bottle necks identified above
- design a program for implementation of agreed recommendations and establish a timetable and budget

h) SNE's Institutional, Administrative and Financial Capabilities The review should include

- review the organizational structure and legislative mandate,
- review SNE's balance sheet,
- review current revenue-generating mechanisms and projection compared to fiscal needs,
- review personnel policies for hiring, promotion, termination, etc

ANNEX C

DRAFT LEGISLATION TO REORGANIZE SNE

**Translated By : Jim Moriss and Shibu B. Dhar
NRECA Consultants**

DRAFT

**THE LAW FOR THE REGULATORY AUTHORITY OF PUBLIC SERVICES
(TRANSFORMATION OF SNE)**

TO LEGISLATIVE ASSEMBLY

Recently I presented for the consideration of the Legislative Assembly the project for constitutional reform to be introduced for the Magna Charta, a new Chapter of economic grantees in the protection of the human rights of citizens

As a part of this reform it is contemplated an action by a regulatory authority of public services charged with the protection of the interest and rights of the users Toward that end, it is proposed to convert SNE into an entity that regulates the provisions of public services

Already in 1969 I had collaborated in the elaboration and presentation of a project of Law (Bill) in these regards in mind which was discussed under the number 4 171 and which was filed in the middle of the 1970 as a result of an executive order However, in several of the areas of regulation and extension of the function of protection for the users there has been some progress but in an inefficient form and with loss of authority and capacity of SNE

SNE was founded by Law number 77 dated July 31, 1928 which decreed the nationalization of electric services and made the responsibility to the cited institution The vigilance of the utilization of those services as well the development of plants greater than 500 HP These legislation was the culmination of an historic fight which came about to counter the abuses of the electric companies by distinguished Costa Ricans of the Civic League directed by Dr Ricardo Moreno Caneas and Mr Jose Victory and attorneys Alfredo Gonzalez Flores, Jose Joaquin Quiros and Ricardo Fournier among others

It is interesting to note, to be later put forth, that in Article 13 of Law Number 77 of 1928 it was established that the member of the Board of Directors of SNE would carry

out their commitment with absolute independent of the executive power and who would for that reason be the only ones morally responsible for the administration of the institution

Later in 1941 the responsibilities of SNE were amplified by Law Number 258 dated August 18, 1941, putting under its responsibility everything related to the utilization and regulation of hydraulic power and electricity In 1942 a law was passed for water utilization in which it was reiterated that it would be the responsibility of SNE to dispose of the control, advantage, utilization, governments, and vigilance over the water in the public domain

After these three regulations, there has been no enhancement of the fundamental doctrine, objectives, functions, and basic organization of the regulatory institution of our country Notwithstanding that since 1940s there have been fundamental changes in the provisions of public services in Costa Rica

As a product of these changes, new regulatory functions were assigned to SNE by way of legal disposition which upon being declared did not activate the philosophy and functioning of the public institutions Several legislative patches have tried to join new responsibilities to a legislation which would be responsive to very different social circumstances

Departing from an initial legislation in the 1940s in the area of nationalization and regulation of hydraulic forces and electricity across the years there were added some very delicate functions which were totally dissimilar to the regulatory organization without being given legally the policies, objectives, and institutional organization , in order that they could really fulfill their functions in favor of consumers and Costa Rican economy

Taking into account the capital importance which for the economy of the country and for the family economy of the consumers of the rates, prices and fees which are charged by companies and public service institutions, it is urgent and indispensable that in the shortest time there be studied and passed a modern and complete legislation which guarantees the state a true and efficient regulation of all public services

So, the functional independence of a regulatory entity with respect to the executive power, clearly established in Constitutional law and seen as an indispensable conditions by its creator in 1928, it is totally non-existence as practice there after As a consequence of various legal and administrative disposition which have been taken by the office of the President of the Republic, by the Council of Governments, or by the economic council, which limit the technical and functional autonomy of the regulatory organization

Without this technical and functional independence, the organization losses its reasons for being because it is the superior political levels that take the tariff decisions based on other types of considerations It must be attained the maintenance of coordination

which is indispensable, but without that signifying to any degree a total submission which as occurs in actuality, making SNE a mere instance of a bureaucratic process

In the same order of things, the regulatory organization inconveniently depend on direct payment made by the regulated companies. So, between 2 or 3 institutions a high percentage of its budget is financed and brings serious implications which can generate among the administrator and directors of the regulatory authority, a certain type of consideration towards those who contribute directly and immediately to their maintenance

With the purpose of solving some of these situations so prejudicial, this project law is presented to transform SNE into the regulatory authority of public services, achieving by that not the creation of a major bureaucracy or public expenditure, but an efficient entity that regulates and sets the prices, tariffs and fees of those public services carried out by both private and state owned companies in a form eminently technical and a guarantee and defense of the consumers and users

LAW OF THE REGULATORY AUTHORITY OF PUBLIC SERVICE

CHAPTER I

CONSTITUTION

Article 1

There is created a regulatory authority of public services named, in the present law the Regulatory Authority, by way of transformation of SNE which will be an institution with public rights, with complete administrative and technical autonomy from the powers of the Republic, the Judicial branch and its jurisdictions, and will operate under the disposition established in this law and its rule as well as in complementary laws. Its attributions will be adjusted to the guidelines of the national development plan

Article 2

The regulatory authority will have its head quarter in the city of San Jose, although it will exercise its function in all of the national territory and can establish offices anywhere in the Republic

Article 3

The regulatory authority will exercise its functions and its attributions in relations to all public and private companies responsible for the provisions of public services referred to by the present law. The assets and the services of the mentioned companies that are not dedicated to public service will not be subject to present regulation but must be registered in separate accounting, without prejudicing the common revenues and expenses which are consigned in accordance with technical norms in such a manner that the distribution is just and does not cause prejudice in any form to the public service activity.

Article 4

The companies dedicated to the provisions of the different public services regulated by this law, be these public or private, are considered concession granted for the specific activity involved. Due to this, they have no right to monopoly over same and will be subject to the limitations or changes that this law imposes.

CHAPTER II

PRINCIPALS AND FUNDAMENTAL OBJECTIVES

Article 5

The basic objective which will form the basis of all actions of the regulatory authority is the defense of the consumers and the users of public services defined in this law and those defined in the future. Such defense will be referred principally to the tariff conditions, price, quality, dependability, quantity and conformity of the services.

Article 6

For the accomplishment of these objectives the regulatory authority will set tariff and prices which offer service at cost which will include only those expenses necessary and indispensable for adequate provision. Included in the cost to be covered by the prices, tariffs, or fees, is one additional factor - the retribution of invested capital for those assets permanently dedicated to the public service. This retribution, whether related to internal capital of the concessioner or credit resources, must be equivalent to the cost of financing in the national market industrial or commercial activities, according to its nature, or in the international market when the resources are external. Also, as a part of the cost depreciation of assets will be included.

Costs of regulated companies which will not be accepted are those non-related to the

provision of the corresponding public service, nor the contributions and cost incurred in activities unrelated to the administration, operation or maintenance of the regulated activities, nor those which are not necessary to the provision of the service. In the same sense investment which are considered unrelated to the specific public service to which the company or institution is dedicated will not be permitted.

Article 7

The regulatory authority will act in accordance with a social policy of the tariff. The prices, tariffs or fees of the public services in so much as they affect or are basic to the family well being of the users must be in accordance with the social tariff policy which regulatory authority must emit and submit for knowledge of and approvable at the initiation of each administration. The general guideline of this social policy should favor the consumers and users of lowest income, and as much in urban areas as in rural areas, and establish the basic levels of consumptions to which all Costa Rican will have a right as part of minimum grade of quality of life.

Article 8

Also, the regulatory authority will act in a form congruent with an economic tariff policy. The tariffs, prices and fees of the regulated public services in this law can not be set lower than the cost of service.

Subsidies or prices will not be permitted which are contrary to the economic, financial equilibrium of the companies or the national economy.

The tariffs submitted for the consideration and approval of the regulatory authority must be congruent with the guidelines of the national development plan and with the national social and economic policies. The regulatory authority will coordinate with the public service companies the investment in and the financing of their activities to avoid excesses that provoke frequent or excessive tariff increases. In all cases contracted debt service and investment programs can not be reasoned for setting or elevating the tariffs and the prices which must be founded in cost as indicated in Article 6.

The regulatory authority will not consider in its authorized tariff excessive cost of investment which are inappropriate for each public service.

Article 9

The regulatory authority will propose at the beginning of each government an environmental policy for public services which provide for savings, conservation and rational utilization of natural resources.

Depending on the environmental impact which any project defined in this law can generate, the regulatory authority can impose extra charges in the prices, tariffs or

contributions for development of such service

Article 10

The environment, economic and social policy of tariff must be formulated by the regulatory authority and submitted to the knowledge and approval or executive power at the beginning of each government

Without the approval of these general policies not new tariffs or prices can be authorized. However, once the policies are known and approved, the decisions only will require the study and approval by the regulatory authority after having been communicated to the public according to the rules of this law

The policies must be presented by the regulatory authority to the president of the republic before the June 15th of the year of presidential election and must be approved by executive decree from the Ministry of Economic Planning and respective ministries before July 31 of that year

Article 11

The Regulatory Authority will have technical and administrative independence. Except for the appoint of its director the Regulatory Authority will not be subjected to instructions or mandates in the exercise of the objectives and functions set by this law

Equally it will be prohibited to receive any type of help from the regulated companies other than the assessment which this law establishes for the adequate financing of the regulatory agency

No director, employee, assessor, stock holder, or relative to the third grade of relation or affiliate of any stockholder director or member of the Board of the regulated companies can be a director or employee of the RA. Neither can members or employees of the executive power occupy these positions. Equally, no director or employee of the RA can give any service whatsoever to the executive power, other powers or institutions or regulated companies. These prohibitions are to remain in effect until one year after the employees or directors previously cited have left the service of the institution

The Regulatory Authority will not belong to nor participate in commissions, study groups, meetings, or similar organization with regulated companies or other public entities in any way which will limit or impede the exercise of its autonomy or independence, or which would relate to matters which are in process of resolution or soon to be consulted about

Article 12

The Regulatory Authority will be responsible of an institution and its employee in a subsidiary manner for prejudices caused by its decision to companies and consumers if issued by error, negligence or contrary to legal and technical norms which so regulate

Article 13

The Regulatory Authority will exercise in the name of the state, the governing and administration of all national waters and power derived from them. These resources are inalienable and will remain in the public domain and vigilance of the state, and no concessionaire can alleged monopolistic or perpetual control of such asset

CHAPTER III

RULES FOR CONCESSIONS

Article 14

All companies responsible for public services regulated by this law, including private parties, who utilize national waters, must obtain a concession from the regulatory authority which will be conceded for a renewable period of 25 years

All regulated public service companies must obtain a concession from the Regulatory Authority and in those cases in which it is convenient an exclusive territory of operation will be fixed. No company can invade the area of operation of another company with a concession, only if an express agreement in effect or the inability of the company as proved by the Regulatory Authority to conveniently supply the necessities of the consumers

The concession will remain subject to the respective special laws which are disposed in the rules of the present law and to the conditions of the concession granted

Article 15

If the concessionaire is a physical person and should die, the regulatory authority will be improved to the measure which impede the interruption service. In like form they will proceed in the case of bankruptcy or insolvent of the concessionaire, during which at the request of the authority, the judge will take necessary measure to provide provisionally the continuity of service

In the cases of administration by judicial intervention, the Regulatory Authority must

be taken into account by the judge of the case for the effect of the interventions

Article 16

The concessions for the development of public utility services do not constitute a monopoly. The Regulatory Authority can grant concession to other persons, companies, or utilities when the demand for services justify such or the same can be offered under better conditions for the user.

In the previous cases, the concessionaire has the obligation to accept interconnection of services or coordination of schedule with the new concessionaire.

The asset destined for the provisions of a public service must be insured against those risks which the regulatory authority deemed convenient.

Article 17

The concession will establish in each case the rights and obligations of the concessionaires for the development of national asset or public service with the goal of not damaging the principal use of these asset nor rights of third parties legally acquired.

Article 18

Obligations of the concessionaires

- a) maintain the installation and equipment in good order and conditions to not constitute danger for persons or houses nor to cause interruption of service
- b) to supply opportunity to the Regulatory Authority all into related to the provision of the service
- c) to carry accounting register of operation in compliance with this law
- d) to fulfill the disposition dictated by the Regulatory Authority with the goal to improve the development of the service

Article 19

In those cases in which the development of a public service can cause damage to the riches and natural resources of the country, the Regulatory Authority can require the interested party to present an environmental impact study. The respective of MIRANEM will be the organization responsible for the analysis, study and approval of said evaluation and also will remit a resolution to the interested party and to the Regulatory Authority within the maximum of 3 months.

By evaluation of environmental impact is understood the scientific-technical procedures which permits the identification and predetermination of the effect on the environment and that an action or a specific project will cause, questioning it and proposing recommendation

The evaluation of environmental impact should include a legal declaration by the submitters that the submitted information and the evaluation is really true. It should include the academic qualifications, technical experience of the professional who as an interdisciplinary team have prepared the report

The interested party would present an environmental impact study that is not significant when demonstrated before the Regulatory Authority that the action or the project by its own characteristics or by the site where it is to be implemented will not produce adverse impact of importance

The evaluation will be applicable to all proposed projects by staffs that individually do not require these type of evaluation but in conjunction could have a significant impact

The cost of the evaluation will be paid for by the proposer also persons who are to be chosen to do the study should have the approval of MIRANEM

Article 20

Concessionaires can't during the concession remove equipment or installation that are indispensable to the public service without the expressed authorization the RA

Also, once a concession is terminated for whatever reason, the equipment, properties and installation which are indispensable to providing the service can be acquired by the state with compensation to the owner. The RA by way a future concession can adjudicate these equipment, installation and properties to a new concessionaires

CHAPTER IV

FUNCTIONS AND POWERS

Article 21

For the fulfillment of its functions, the RA will have the responsibility for complete regulation including prices and tariff of the following public services

- 1) provision of electric energy by companies with public capital, private or mixed

capital, regardless of the business from that they legally have

- ii) services of telecommunications by companies of public capital, private or mixed of whatever business to whom a concession has been given for the development of these type of activity
- iii) provision of portable water, recollection, treatment and evacuation of black water (sewer), industrial waste or rainwater, provided by either public or private companies
- iv) provisions of fuel derived from petroleum in all of their stages of importation, refining, storing, transporting, and fuel distribution to the consumer, whatever the type of business--so long as the monopolistic structure of this activity is maintained

The contract between the regulated companies and distributors of the respective services must be previously approved by the regulatory authority

Article 22

The Regulatory Authority will get prices, tariff and fees, know and resolve complaints concerning these resources, revise and revoke concerning the following the public services whose technical and administrative regulation will continue to be the responsibility of the institution actually designated for the service

When complaints are presented by users or organized groups, they will be subject to these law

- i) public services of transport paid for by persons, land, air, sea, and river, railroads and national and international services are included, and
- ii) required or obligatory insurance under INS

Article 23

It also will be responsibility of the regulatory authority to set prices, tariff, and fees of other public service activities which benefit or affect consumers including regulation of quality, quantity, and dependability in the provisions which in the future is legally given For each specific case the legislative assembly will emit complete legislation to be added to this law including new public services

Article 24

It will be the responsibility of the Regulatory Authority to administer and govern in

the home of the state the waters of public domain and the hydraulic pros derived from them or any other source for the generation of electricity or form of energy which is susceptible to being developed as a public service when such source id developed as such

These responsibilities of administration will be exercised as long as they are not assigned by expressed legal disposition to another institution dedicated to these purposes

Article 25

It will be the responsibility of the Regulatory Authority to set prices, tariff, fees and contribution for the provision of the different public services, having fulfilled the procedures and processing of approval by the executive power with regard to the general policy of prices and tariff as indicated in **Articles 7, 8, 9 and 10** as well as the previous public consultation of consumers and public in general and previous publication of the new prices, tariff, fees and contributions

The public consultation indicated will be an open meeting in which employees of the Regulatory Authority will receive in the place considered most convenient, those persons who desire to express their opinion over the rates in question This meeting will be publicized in a daily of national circulation giving the pace and the hour For these requirements there must be at least four hours on work days when it concern a service of regional level and 8 hours if it is for a service for national level

Priority will be given to hearing of organized groups of users who are affected by the proposed rates and after these the rest of the time will be assigned to those who want to speak on the subject, according to a strict order of application to intervene

Article 26

The Regulatory Authority also will have the following powers and limitations

- a) To regulate the public services indicated in **Article 21** by exercising supervision of the regulated activity in its economic, financial and technical aspects as well as the conditions of quality, quantity, reliability and continuity of the assets and services to be delivered to the consumers
- b) To audit the accounting and technically the business indicated in **Article 21, 22, and 23** to confirm the normal management of factors which affect the cost of service, including investments made, debt incurred, level of revenue received, the costs and expenditures made or the profit margin produced

In case errors are found, incorrect information or any other anomaly, the necessary adjustments will be ordered According to the case, apart from the

affected company, notification will be given to the Controller General, to the Rector Minister, or to the Public Minister

- c) Without study, approval and previous publication by the Regulatory Authority, no price, tariff, fee or contribution can be charged for the public service activity mentioned in this law
- d) Any complaint or recourse against the rates set by the Regulatory Authority must be resolved with diligence and promptness. Failure or negligence of this obligation will constitute a serious fault of the responsible employees, as provided for in this law
- e) All conflicts raised by users will be resolved first by administrative means with the companies or between them regarding the application of prices, tariffs, fees or contribution or for the conditions of the provision of the service involved
- f) In no case will the administration of the regulated companies be exercised or assumed for the purpose of distracting resources from the regulations of public services. However, the required supervision and audit will be exercised over all installations and equipment dedicated to the public service, as indicated in the previous articles
- g) It (the Regulatory Authority) will have personnel trained and specialized in each of the professions and technical areas which are regulated
- h) In the setting of prices, tariffs, fees, and contributions of the public services, the Regulatory Authority will not consider the particular situation of each company, but rather a productive model structure according to the knowledge and possibilities of the service

CHAPTER V

GENERAL CONDITIONS FOR PROVISION OF PUBLIC SERVICES AND THEIR FINANCES

Article 27

Any type of discrimination in favor or against any group, class, or individual

consumer by the regulated companies is prohibited

Article 28

Equally, it is not permitted for regulated companies to divert resources, assets, revenue, or to incur, within the accounting for activities defined in Articles 21, 22, or 23, expenses for activities unrelated to the public service which, by concession, they are responsible for providing

Article 29

The Regulatory Authority will limit and publish rates which specify the conditions of quality, quantity, reliability and continuity for each regulated service

These rule, as necessary, will establish the conditions of energy efficiency and advantageous use of the natural resources of the country The companies can request the Regulatory Authority to decide for users the quality and efficiency of energy use by the public services provided

Article 30

The Regulatory Authority will determine the accuracy and reliability of metering instruments used by the regulated companies for the delivery of products and services to consumers The inspection to be carried out in this respect will be complete, continuous, and throughout the entire country, and will be done as a matter of routine or upon formal complaint of the users

Article 31

The regulated companies or institutions will establish and maintain information systems for finances, economics, statistics and technical data as ordered by the Regulatory Authority Also they will submit the reports required by the Regulatory Authority and, in timely fashion, elaborate and publish at least quarterly a general report of the financial condition and capacity to satisfy the demand of the users

The Regulatory Authority will have the power to inspect registers, legal accounting books, receipts, reports or installations of public service companies

Article 32

The regulated companies and institutions must submit for the knowledge of and previous approval by the Regulatory Authority their programs of investment, expansion and

indebtedness

The regulated entities cannot depart from the dictates which authorize or prohibit or limit an investment, unless resources from other sources are assigned for such execution. In this case, assets so designated will not be considered to determine depreciation nor will the respective financial cost be considered in setting tariffs.

Article 33

If the provision of a public service mentioned in **Article 21** is interrupted, the Regulatory Authority can recommend to the **Executive Power** the intervention of the assets necessary to assure the provisional offering of the service if the situation is not normalized.

Also the same procedure (intervention) will be followed if the service were to be deficient for causes totally attributable to those who provide the service or in case of emergency which makes the action necessary.

CHAPTER VI

THE BOARD OF DIRECTORS AND TOP ADMINISTRATION

Article 34

The Regulatory Authority should have an internal organization composed of

- a) The Board of Directors
- b) The Management
- c) The Internal Auditor function

These organisms will oversee and be responsible for adopting an internal organization which guarantees the fulfillment of the purposes and objectives of this law. The Board of Directors as well as administrative personnel of confidence who work for the RA will be absolutely prohibited from participating directly or indirectly in elective political activities other than casting votes or in any other activity or professional, business, or private function which can influence or is not in accordance with their function in the institution.

Article 35

The Regulatory Authority will function under the direction of a Board of Directors made up of seven members.

The appointments will be by the Council of Government for terms of four years. Two members will be named between May 15 and May 30 of each of the first three years of each administration and one director in the last year on the same dates. Their removal only can be effected when there exists a serious failure to accomplish the responsibilities established by this or other laws.

In the first session of each year, the Board of Directors will designate from among its members a president. His reelection will be permitted.

Also a vice-president will be designated who will substitute for the president in his temporary absence. In case the absence of the top officer is definite, the Board will name a substitute for the rest of the period.

Article 36

The members of the Board of Directors will be seven persons of recognized and proven experience in the regulation or administration of public services, chosen from a list of persons submitted to the Executive Power by the following entities:

- i) Federated College of Engineers and Architects
- ii) College of Licensed Economic Scientists
- iii) College of Attorneys
- iv) College of Public Accountants
- v) Unions represented by the Permanent Council of Workers
- vi) The Solidarity Union in the name of the Associates of that nature, and
- vii) Union of Chambers (of Commerce)

Employees or assessors of any Powers of the Republic cannot be named directors nor the directors, assessors, or employees of regulated institutions or companies. Neither can be named ex-employees or ex-assessors previously cited until two years after having had such relationship.

The directors and employees of the Regulatory Authority should have vast knowledge and sufficient experience in the subjects and public services and their regulation.

Article 37

The directors, assessors, managers and employees of the Regulatory Authority cannot receive, other than legal compensation, any contribution, aid or advantage from the regulated companies or from the central government.

The same prohibitions apply to their relatives up to the second grade of relationship to the cited employees.

Article 38

The Board of Directors will have a group of assessors specialized in the different subject matters to be regulated which will give assistance in all matters submitted for decision. This assessor group will exercise its functions with complete independence and strict professional action, attending to the instructions and requests of the directors and having gathered whatever information considered pertinent from the Regulatory Authority, the regulated companies or any other state source. Their principal function will be to question, from the technical point of view and with strict adherence to this law, all reports and matters submitted to the opinion and decision of the Board of Directors.

Article 39

The members of the Board should be of recognized honor, Costa Rican by birth or naturalization with no less than ten years residency in the country, of majority age (not minors) and, in each case, members of the corresponding professional colleges.

Article 40

These will cease to be members of the Board of Directors

- a) He who does not fulfill any of the requirements or duties established in this law or finds himself within the incompatibilities and prohibitions indicated
- b) He who is absent from the country for more than one month without authorization of the Board
- c) He who misses three consecutive meetings without justifiable cause
- d) He who infringes on any of the provisions of the laws, decrees, or rules applicable to the Regulatory Authority or who proposes to break the law
- e) He who has been unable to perform his duties for more than six months due to physical or mental incapacity
- f) He who renounces his position
- g) He who has been condemned for any crime

In case of any of these circumstances affecting a director, the Council of Government will appoint a substitute as soon as possible for the rest of the term.

The separation of the members from the Board of Directors will not free them from any responsibility they may have legally incurred.

Article 41

The members will adopt agreements for the compensation and number of meetings established by the law which regulates these matters in other decentralized entities. This will be the only remuneration they can receive for their services and the exercise of their responsibility.

Article 42

To assume their positions, members of the Board of Directors must post bonds of one million Colones which can be bonds of the State, fidelity policies from the National Insurance Institute, bank certificates, or real guarantees. The amount of the policy will be reviewed by the Council of Government every five years, increasing or decreasing it in agreement with the variation in the index of consumer prices for said period.

Article 43

The Board of Directors will meet ordinarily once per week in the place, day and hour they determine at the beginning of each annual period of appointment and extraordinarily (called meeting) each time convened by the president or by more than half the members. The extraordinary meetings will be called in writing with at least 24 hours notice indicating the place and hour of the meeting and only those matters may be considered which are included in the meeting notice.

The Board of Directors can receive in its meetings, with previous agreement, directors or employees of regulated companies or institutions or of the Executive Power while a variation of tariffs, prices, or fees is in process, or a rule for a regulated service, or while a recourse (reconsideration) of one of its decisions is being resolved. However, these persons will not be permitted to attend the meetings in which resolutions are voted upon.

No director or manager of the Regulatory Authority can attend as an invitee at meetings of the boards of directors of the institutions referred to in Articles 21-24 while processing those matters noted in the paragraph above.

Article 44

The quorum for a valid meeting will be four members. Agreements will require a majority vote of those present, except those cases which by law require a qualified majority. In case of a tie vote, the president, or whoever is his legal substitute, will resolve it with a double vote. No member present can excuse himself from a vote and can require in any matter that the reason for his vote be recorded. Such reasons must be included in the transcriptions or publications of the decision.

Article 45

Five votes at least will be required to validate the following decisions

- a) Study and approval of proposed social, economic and environmental policy of tariffs as indicated in Articles 7, 8, and 9 of this law
- b) Resolution of petitions for tariffs, prices, fees, or contributions by regulated companies
- c) Granting or amplifying concessions to public service companies regulated by the Regulatory Authority
- d) Appointment and removal of the manager or auditors, internal or external
- e) Approval of the budget of the Regulatory Authority and of operations or acts which affect more than 5% of the total budget

Article 46

The members of the Board of Directors should abstain from giving opinions or participating in the decision of any matter in which they can have an interest, direct or indirect, and cannot be present in the meeting in which a matter will be discussed in which they have a direct or indirect interest, in accordance with this law To not observe this rule in this article will be cause for removal of the member from the Board or from employment

Article 47

Responsibilities and powers of the Board of Directors are

- a) To study and propose the social, economic, and environmental policies of tariffs, prices, and fees of the public services regulated by the Regulatory Authority
- b) To define the policies and the programs of the Regulatory Authority in accordance with the principals and objectives of this law, with the National Development Plan and the directives legally emitted by the Executive Power
- c) To set the tariffs, prices, fees and contributions of the public services under jurisdiction of the Regulatory Authority and to resolve, by administrative means, the recourse interposed against them
- d) To approve and modify the rules of service of each of these activities

- e) To approve the budget of the Regulatory Authority, its modifications and any operation which affects more than five percent of the total
- f) To approve the publication of decisions and to resolve public litigations concerning the Regulatory Authority
- g) To approve purchases and contracts of works and services in the following manner directly up to an amount no greater than one percent of their budget, for private bidding up to a sum that does not exceed five percent and all others by public bidding
- h) To present to the Executive Power those projects of law or executive decrees deemed necessary and convenient to improve the regulation of public services and for the protection and defense of consumers

The Legislative Assembly and the Executive Power should consult the Board of Directors on any initiative that would affect the atmosphere of its functions

- i) To examine and approve the Financial Status of the Regulatory Authority and the expanding of its budget
- j) To approve the reports which the Regulatory Authority must emit and publish at least semiannually of the situation and performance of regulated companies
- k) To name and remove the Manager, the Internal Auditor in accordance with this law as well as the external auditors
- l) To set the salaries of the Manager, the Auditor and the specialized assessor group of the Board of Directors
- m) To be knowledgeable in detail of the appeals presented for resolution by the Manager and by the Internal Auditor The employees involved cannot be present in the meetings where such appeals are discussed and resolved, but they can present their arguments in writing without prejudice
- n) To name the members and establish the function of the specialized assessor group of the Board and to receive their reports and opinions
- o) To present on the last day of April, at the latest, of each year of the Legislative Assembly a report of the work and activities realized during the previous year This report will include those who render decisions of the Authority The President of the Legislative Assembly will inform the legislators of the existence and receipt of the report

- p) All other responsibilities and powers conferred in accordance with all laws, executive decrees or service rules of each activity indicated

CHAPTER VII

THE MANAGER

Article 48

The manager of the Board of Directors will have under his responsibility the judicial and extra-judicial representation of the institution and will be named and removed by the Board in conformance with laws. He will respond to the Board for the faithful accomplishment of the agreements and orders dictated by said organism and will be an employee with exclusive dedication to the institution. He will attend the sessions of the Board with voice but without vote.

Article 49

The following (persons) can not be Manager of the RA

- a) He who is affected by any one of the prohibitions or limitations that this law imposes
- b) He who does not have the experience or capacity in the administration and regulation of public services that this law requires
- c) He who cannot dedicate himself exclusively to the functions of the RA
- d) He who has or has had direct or indirect connections with the regulated companies or with the Supreme Powers in the five years prior to his appointment, according to that which is established by this law
- e) The directors of the Board

Article 50

The responsibilities and functions of the Manager

- a) To program the activities and functions necessary to reach the objectives of the RA, performing the general, social, economic and environment policies of the tariffs, prices and fees of the public services and submitting them to the knowledge of the Board of Directors

- b) To propose to the Board of Directors for their study and approval the administrative organization of the RA as necessary for the best accomplishment of the objective, responsibilities and functions that this law establishes
- c) To present to the Board of Directors for their approval the ordinary and extraordinary budgets of the RA Once approved, he must turn them in to the Comptroller General of the Republic
- d) To present to the Board of Directors the petitions for tariffs, prices, fees and contributions together with the technical reports and opinions of the assessor group regarding the petitions and reports
- e) To present to the Board of Directors the project of rules for each regulated public service with the corresponding opinions and recommendations
- f) To diligently coordinate the activities of the Regulatory Authority with all other employees and agencies of the State, centralized and decentralized, and to periodically inform the Board of Directors of the results of such interaction
- g) To send for publication in the Official Daily or in the press the agreements, resolutions and rules approved by the Board of Directors
- h) To present to the Board of Directors the projects of rules necessary for the execution of this law and for the efficient administration and functioning of the Regulatory Authority
- i) To approve the purchase of goods and services in conformance with the budget approved by the Board of Directors, the Comptroller General of the Republic and applicable laws
- j) To exercise the necessary controls over the employees and functionaries of the Regulatory Authority, in conformance with the labor laws of the country and the Autonomous Rules of Service, with the predetermined exceptions in this same law and those of the Board of Directors
- k) To present to the Board of Directors the annual report and periodic financial status of the Regulatory Authority with his opinions and recommendations, along with the relative analyses of the general performance which, in his judgement, are useful to propose for the good operation of the institution
- l) To give or revoke the general and special powers as needed

- m) To respond to the Board of Directors for the normal and efficient functioning and administration of the Regulatory Authority for which he will have at his disposal the necessary administrative and technical personnel in the different departments of the institution
- n) To exercise other functions, responsibilities, and obligations imposed by this or other laws, agreements of the Board of Directors, rules or executive decrees

CHAPTER VIII

THE INTERNAL AUDIT

Article 51

The Internal Audit of the Regulatory Authority will be the responsibility of an auditor with the degree of authorized public accountant and with sufficient professional experience in institutional auditing, who will have in his responsibility the permanent functions of vigilance (oversight) and fiscalization of the assets and operations of the institution, and he must inform the Board of Directors of any unauthorized use of resources, failure to accomplish the objectives, functions and responsibilities. For this, he should effect accounting, financial and operational reviews that are considered convenient. He will report to the Board of Directors and will be named by that organism by vote of five of its members.

Article 52

The internal auditor will be unremovable except, in the judgement of the Board of Directors and with previous information communicated to the Comptroller General of the Republic, it is demonstrated that he does not complete the required functions and responsibilities inherent to his job. The removal of the internal auditor can be done only with the same number of votes necessary for his appointment.

Article 53

The following (persons) cannot be the Internal Auditor

- a) He who has any legal impediment, or is or becomes a relative of any member

of the Board of Directors or of any employee of the RA through the third grade of relationship or affinity

- b) He who is or has been, in the two years prior to the date of his appointment, a director, assessor, or employee of the regulated companies or of the Supreme Powers

Article 54

Responsibilities and functions of the Internal Audit

- a) To present at the beginning of his functions and at the beginning of each year a complete program of work of the tasks to be accomplished in regard to the accounting, financial and operational verifications
- b) To present annually to the Board of Directors a report of the financial and budget status of the Regulatory Authority, about the operational performance of the different units of work and about the achievement of the objectives and functions of the institution Also he should present monthly, or when circumstances merit, reports of the results of his investigations and of the completion of the work plan He should communicate immediately to the President and to the Board of Directors the irregularities, infractions and deficiencies that he observes
- c) To produce with all diligence the information solicited by the Board of Directors
- d) To certify invoices and bills for credits in favor of the RA which for legal effects are given the character of executive title
- e) To attend the sessions of the Board of Directors with voice, but without vote
- f) To exercise other functions indicated by law, the rules and arguments of the Board of Directors

CHAPTER IX

PETITIONS FOR TARIFFS AND PRICES

Article 55

The Board of Directors of the Regulatory Authority will emit a general rule which will contain the definitions, requirements, conditions and time frames to which will be subject all applications for tariffs, prices, fees and contributions that the regulated companies and institutions should present

Article 56

The regulations over petitions for tariffs, prices, fees and contributions for the different public services should be adjusted to the social, economic and environmental policy which, at the initiation of each Government, the Regulatory Authority will submit to the knowledge and approval of the Executive Power. The petitions made by companies with concessions must adjust to these policies

Article 57

the public service companies referred to in this law may present applications for change of tariffs, prices, fees and contributions whenever they consider it convenient. The RA is obligated to receive and process them when they meet all formal requirements established by rules. It (the Regulatory Authority) cannot introduce changes of concept, process, or other conditions, without the prior knowledge of the companies and of the general public, modifying the corresponding general rule

The Regulatory Authority, in agreement with its powers, can modify to the benefit of the consumers, with required technical justification, any presentation of the companies

Article 58

The public service companies must always respect the principle of service at cost in such manner that their operation revenues from tariffs, prices fees and contributions set by the Regulatory Authority cover all their costs, expenses of operations and a margin or reasonable excess on invested capital that should be adequate for the cost of capital in the financial market. In no manner will it be acceptable as concepts to cover by tariffs, prices, fees or contributions set by the Regulatory Authority the costs, expenses, investments and debts unrelated to the respective public service or that have been judged by said institution as excessive or unwarranted. The investments should be generated by the recuperation of depreciation, from the margin on their own capital, from credits that can be tended to by cash flow or from unredeemable assessments (of capital)

Article 59

Every petition for tariffs, prices, fees or contributions of the public service companies presented before the Regulatory Authority must be obligatorily justified by the applicant and

have the formal approval of their Board of Directors, and also must contain formal declaration that the conditions imposed by the Regulatory Authority have been fulfilled as previously set or (set) in interventions in the exercise of the powers prior to the application to change prices. Once the application is presented, the Board of Directors may receive in public audience, upon request of the applicant, a representative of the company which asks for the revision of tariffs.

the petitions obligatorily must be resolved in a period of 30 natural (calendar) days, if this period transpires and there is no pronouncement from the Board of Directors, the application is considered rejected.

The applicant may interpose recourse of reconsideration before the Board of Directors within five days after the decision is communicated or after the period has elapsed (and) it is rejected. This recourse must be resolved in a period of eight natural (calendar) days.

CHAPTER X

SANCTIONS

Article 60

The Board of Directors of the Regulatory Authority will sanction administratively with a fine of 500,000 Colones whoever provides any public service and who incurs any of the following faults:

- a) When they charge prices higher than those indicated by the Authority
- b) When orders or preventions of this law are not followed or those emitted by the Regulatory Authority
- c) When false or altered information is utilized to request revision of prices, tariffs or contributions

The amount of the fine will be reviewed each year by the Board of Directors to adjust it in accordance with the variations of the index of prices to the consumer of middle and low income as indicated by the Directorate of Statistics and Census of the Ministry of National Planning and Economic Policy.

Article 61

The sanctions will apply without prejudice of any other responsibility that might be

chargeable The fines that are imposed will favor (go to) the preventative programs of the Institute for Alcoholism and Drug Dependency

Article 62

The fines in no way can be considered costs or operations

CHAPTER XI

ATTENTION TO THE USER

Article 63

There will be established within the Regulatory Authority a Department of Attention to the User (Department of Consumer Affairs) whose responsibility will be to receive and investigate administratively any denouncement (complaint) presented by consumers about the provision of the public services referee to in this law, (or by) the development associations or whatever organized group of the communities

The companies noted in this law and the public institutions are obligated to all necessary collaboration in order that this department efficiently completes its functions

Article 64

The department will be under the control of a director named by the Board of Directors for annual periods with the possibility of reelection

The department will conduct the necessary investigations that are motivated by each complain presented in writing before its office In case any of these complaints are with foundation, it will have the obligation to communicate it immediately, with the reasons and proofs documented, to the Board of Directors in order that they take measures in the case If from the complain made there are penal responsibilities inferred for any of those involved, the director of the department should inform the Ministry of the Public

Once each year, the director should present to the Board of Directors a detailed report of the functioning of the department, indicating all investigations realized and their results

Article 65

Once a complaint is received, the department should act without delay to clarify it

for which it will have the proper personnel necessary for its functions

In the act of receiving a complaint, the director will communicate it to the Manager which will signal a period which can not be less than 30 days or more than 120, in which it should complete its inquiry. If it turns out to be unfounded, the director will notify the Manager of the Board (and), otherwise it will be subject to the provisions of the preceding article

CHAPTER XII

FINANCING

Article 66

The Regulatory Authority will have its own financing which will consist of an annual charge, payable quarterly in advance, on the costs of the regulated tariffs and prices. The companies providing public services indicated in Articles 21-24 should deposit it opportunely in the account to be maintained for that purpose by the institution. Non-payment on time of the assessment or regulation will occasion the cumulative payment of delayed interest by law.

The cost of regulation which should be covered by each company will be defined annually (and) proportionally by the Controller General of the Republic dividing the total of budgeted annual costs of the Regulatory Authority, lowering or raising by the credits or deficits from the previous year, among the budget for ordinary revenue of each public service company from regulated tariffs, prices and contributions of the following year.

The general patrimony of the Regulatory Authority cannot be embargoed and in no manner can it be transferred or used by the Central Government or its institutions.

CHAPTER XIII

GENERAL DISPOSITION

Article 67

The Regulatory Authority will assume all assets and liabilities of the Servicio Nacional de Electricidad (SNE)

Also all obligations assigned by other laws to SNE and which do not oppose this law will be assumed by the Regulatory Authority

Article 68

The Regulatory Authority, as the administrative entity of public utilities and institution of the State, will be exempt from all types of taxes and national or municipal contributions. This exemption does not include payment for public services the institution uses.

Article 69

The Executive Power will implement this law in the un-prolongable period of three months.

Article 70

In effect as of its publication

TRANSITIONAL DISPOSITIONS

Transition I

The creation of the Regulatory Authority does not imply variations in the concessions granted prior to the enactment of this law by SNE to public or private entities. Nevertheless, the Regulatory Authority will review the granted concessions and order the renewal or expiration of those which are not fulfilling the ends for which they were conceded and of those which do not fulfill the objectives of this law.

Transition II

The employees and functionaries of SNE will form part of the personnel of the Regulatory Authority. Only those will be released who perform functions the new institution does not have within its jurisdiction.

Transition III

Upon the effectiveness of this law, the members of the actual Board of Directors of SNE will cease in their positions and will be substituted by the new Board of Directors of the Regulatory Authority.

Transition IV

The first appointment of the seven directors of the Regulatory Authority will be accomplished by the Council of Government in one single act, however, the appointments should be subject to that predetermined in **Article 35** of this law in such form that the following administration can name the directors as established by the indicated numbered section. Toward this effect, the Council of Government will draw lots for the terms of each designation and will so indicate upon naming the directors

Transition V

During the first five years of the functioning of the Regulatory Authority, the prerequisite of experience indicated for the members of the Board of Directors in Article 36 will not be required

Assembly, etc

Miguel Angel Rodriguez Echeverria, Diputado

Note This project (bill) passed to the study and report of the Permanent Commission of Social Affairs

ANNEX D

SAMPLE COMMON DATA FORMS FOR ELECTRIC UTILITY

Form 1

| | | 1 | 2 | GENERATION CAPACITY (MW) | | Oil and Gas Steam | Combustion Turbine | Combined Cycle | Fossil Cogeneration | Nonfossil Cogeneration | Biomass | Geothermal – Vapor | Geothermal – Liquid | Wind | Solar – Photovoltaic | Solar – Thermal | Hydro | Pumped Storage | Private Supply | 3 | SCHEDULED MAINTENANCE | 4 | NET CAPACITY | 5 | RESERVE MARGIN |
|--|--|---------------------|------------------|--------------------------|--|-------------------|--------------------|----------------|---------------------|------------------------|---------|--------------------|---------------------|------|----------------------|-----------------|-------|----------------|----------------|---|-----------------------|---|--------------|---|----------------|
| | | 1 | 2 | Total Peak Demand | | | | | | | | | | | | | | | | | | | | | |
| | | a. Gross Total Load | b. System Losses | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | |
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Form 2

SUMMARY OF ENERGY REQUIREMENTS AND RESOURCES
GWh

| | 1984 Actual | 1985 Actual | 1986 Actual | 1987 Actual | 1988 Actual | 1989 Actual | 1990 Actual | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------|------|------|------|------|------|------|------|------|
| 1 ENERGY LOAD (GWh) | | | | | | | | | | | | | | | | |
| a. Total Energy Consumption | | | | | | | | | | | | | | | | |
| b. Pumped Storage Requirements | | | | | | | | | | | | | | | | |
| c. System Losses | | | | | | | | | | | | | | | | |
| 2 ENERGY PRODUCTION | | | | | | | | | | | | | | | | |
| Oil and Gas Steam | | | | | | | | | | | | | | | | |
| Combustion Turbine | | | | | | | | | | | | | | | | |
| Combined Cycle | | | | | | | | | | | | | | | | |
| Fossil Cogeneration | | | | | | | | | | | | | | | | |
| Nonfossil Cogeneration | | | | | | | | | | | | | | | | |
| Biomass | | | | | | | | | | | | | | | | |
| Geothermal -- Vapor | | | | | | | | | | | | | | | | |
| Geothermal -- Liquid | | | | | | | | | | | | | | | | |
| Wind | | | | | | | | | | | | | | | | |
| Solar -- Photovoltaic | | | | | | | | | | | | | | | | |
| Solar -- Thermal | | | | | | | | | | | | | | | | |
| Hydro | | | | | | | | | | | | | | | | |
| Pumped Storage | | | | | | | | | | | | | | | | |
| Private Supply | | | | | | | | | | | | | | | | |
| TOTAL ENERGY PRODUCTION | | | | | | | | | | | | | | | | |

9/1

Form 3

EXISTING AND PLANNED UTILITY OWNED HYDRO RESOURCES

| Plant Name and Unit Number | Date Installed/ Modified | Percent Ownership | Installed Capacity (MW) | Dependable Capacity (MW) | Average Annual Energy (GWH) | Location | |
|----------------------------------|--------------------------------|----------------------|-------------------------------|--------------------------------|--------------------------------------|--------------------|-----------------|
| | | | | | | Stream or River | Water Region |
| Hydro | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Total Hydro | | | | | | | |

EXISTING AND PLANNED UTILITY-OWNED HYDRO RESOURCES

| Plant Name and Unit Number | Variable O&M Costs (1985\$/MWh) | Instant Capital Costs (1985\$) | Expenditures As of 12/31/85 | Type of Change Proposed | Status |
|----------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|-------------------------------|--------|
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